Preliminary User's Manual
VC100

June 26, 2007 – Rev 1.1
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Preface

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Version	Date	Comment	By
1.0	2007.06.11	Initial release	S. Ackerman
1.1	2007.06.26	Updated Presets, Added Audio Test Tones, Added Appendix B	S. Ackerman
1.2			
1.3			
1.4			

FCC Statement

Note: This equipment has been tested and found to comply with the limits for Class B digital devices, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential/office installation. The equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced Radio/TV technician for help.
- Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Safety – VC100

Warnings and Warning Symbols

	The Lightning Flash with arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of un-insulated "dangerous voltage" within the product enclosure, voltage that may be of sufficient magnitude to constitute a risk of shock to persons.
	The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product. WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPARATUS TO RAIN OR MOISTURE. OBJECTS FILLED WITH LIQUIDS, SUCH AS VASES, SHOULD NOT BE PLACED ON THIS APPARATUS.
	WARNING: THIS APPARATUS IS INTENDED TO BE CONNECTED TO A POWER OUTLET THAT INCLUDES A PROTECTIVE EARTHING CONNECTION (I.E. A THIRD PIN GROUND). DO NOT REMOVE THE THIRD PIN OF THE POWER CABLE OR CONNECT THE UNIT IN ANY WAY THAT DOES NOT CONNECT THIS PIN TO GROUND.

Important Safety Label Information
A label indicating important safety information is located on the xx (Note the xx) of the VC100.

Important Safety Instructions

1. Read these instructions. Keep these instructions.
2. Take note of all warnings.
3. Follow all instructions.
4. Do not use this apparatus near water.
5. Clean only with dry cloth.
6. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
7. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
8. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade and the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
9. Protect the power cord from being walked on or pinched, particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
10. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
11. Unplug this apparatus during lightning storms or when unused for long periods of time.
12. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as when the power-supply cord or plug is damaged; when liquid has been spilled or objects have fallen into the apparatus; or when the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

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Introduction

The VC100 brings legendary Teranex image quality to the Broadcasting world. The VC100 is packed with proprietary Teranex technology, like PixelMotion™ Deinterlacing and Multi-Directional Diagonal Filtering (MDDF™) algorithms, drastically reducing jaggies on diagonal lines. Teranex's Per-Pixel Temporal Recursive Noise Reduction algorithm minimizes HD and SD video noise. Correct cadence is assured through Teranex's Per-Pixel Video/Film detection. Teranex HQV Technology yields unsurpassed image quality for the demanding Broadcaster.

The Dual REALTA™ architecture includes the industry's first fully software programmable video array processor capable of performing over 1 trillion operations per second per chip. In addition it performs end-to-end true 10-bit image processing. The powerful Teranex Video Processor (TVP) core, built into the Realta, ensures flexibility and future proofing by enabling subsequent software improvements without making hardware obsolete. The Dual-Realta Module supports an I/O data path that is 32-bit and is assignable as 30-bit YCrCb or RGB.

This flexible frame synchronizer is able to handle just about any signal at its inputs and outputs in either HD or SD formats. The VC100 uses two Silicon Optix Realta image processing engines, reducing overall size while maximizing image processing capability. The result? The best possible picture from the most flexible, powerful, and user-friendly frame synchronizer available today, all in a space-saving 1RU design.

Features:
- Legendary Teranex Processing within a 1RU Frame
- Two Fully Independent Processing Channels
- Dual Realta Engines Provide Power & Flexibility
- Software Field Updatability and Upgradeability
- Single Channel Unit Upgrades to Dual Channels
- Flexible Video and Audio I/O
- Flexview Aspect Ratio
- Full SD 608 and HD 708 Closed Captioning Capability
- Easy Setup with Intuitive User Interface
- Front Panel LCD Serves as Video I/O Monitor & Menu Display
- Integrated Video & Tone Test Signal Generator
- Gain & Phase Control of all 16 Audio Channels
- Redundant Power Supplies

VC100 Applications:
- Network Feed Centers
- Mobile Truck Applications
- International Broadcast Exchange SD/HD Linear Standards Conversion
- HD Broadcast Exchange Cross Conversion
- Frame Synchronized SD Video Signal Up Conversion To HD Switchers
- Frame Synchronized HD Video Down Conversion
- Frame Synchronized SD/HD VTR Conversion and Monitoring
- Frame Synchronized SD/HD Video Noise Cleaning

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Overview

Filters and Algorithms

PixelMotion™ De-interlacing
PixelMotion de-interlacing of video originated material produces perfect progressive frames in preparation for further processing. The processing aperture is adjusted on a pixel-by-pixel basis, which preserves all of the detail of the original interlaced image and eliminates jaggies in the output image.

Scene Change Detection
Preserves clean cuts between scenes. Upon detecting a cut, the temporal aperture is reduced from 4-fields to 2-fields for the first frame in the new scene. This prevents uncorrelated data from being used in the interpolation process at scene boundaries.

3:2 Handling
Recognizes and handles the redundant fields inserted by the telecine during 24fps film to 30fps video conversion. By detecting 3:2 sequences it allows for better performance in the de-interlace process by maintaining the full vertical resolution.

Aspect Ratio Control
Allows selection from standard aspect ratios, such as common top & bottom, common sides, 14:9 and Anamorphic. In addition, it allows for Flexview, a non-linear anamorphic aspect ratio, to be used in up-conversions.

Detail Enhancement
Is an edge-sharpening filter based on a traditional film compositing technique called "Unsharp Masking." This filter corrects any blurring introduced during image capture, compression or resampling.

Noise Reduction
Adjustable noise reduction controls offer a greater degree of temporal recursive noise reduction with fewer artifacts. A bias control allows the aggressiveness to be fine-tuned. For filter performance testing, a Red Overlay can be applied that will color pixels that are in motion in Red.

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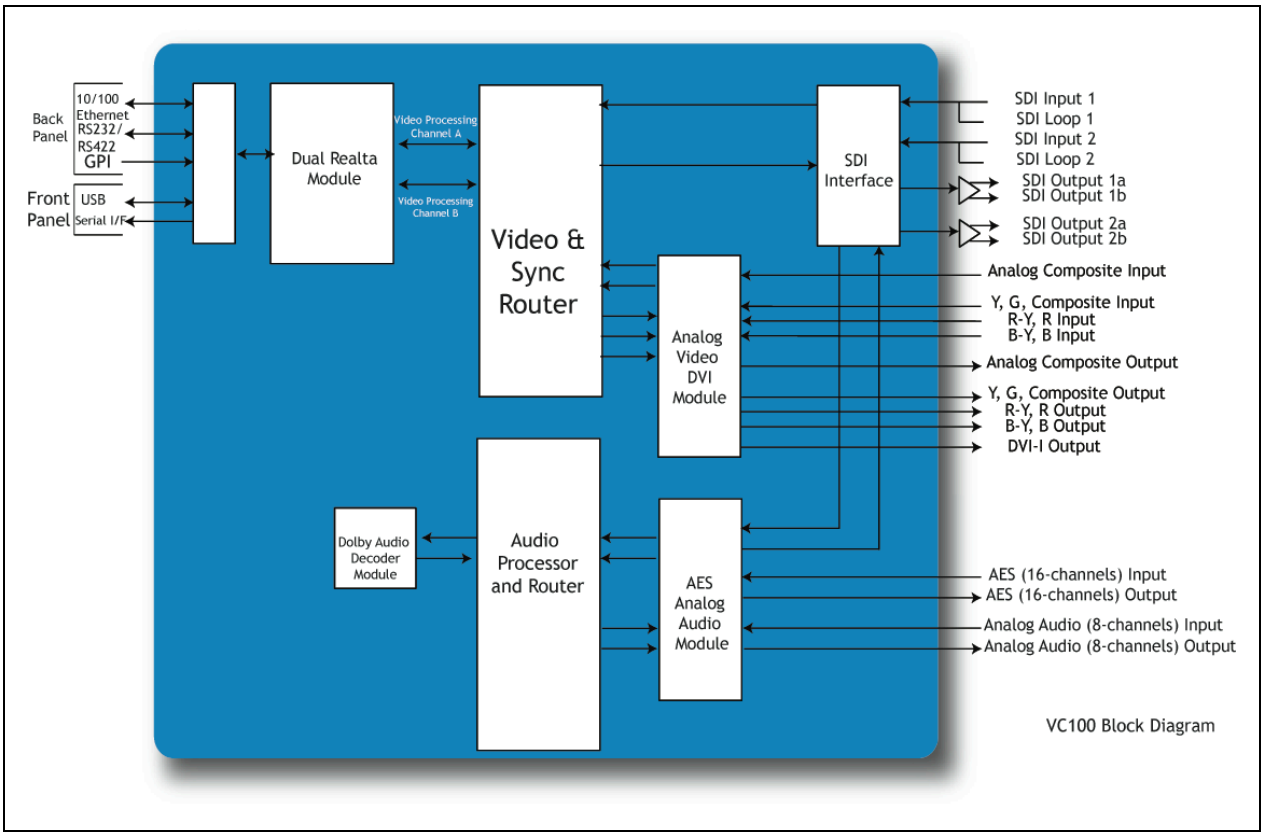
Block Diagram



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Supported Format Conversions

The VC100 supports the following format conversions:

Input	Output		Input	Output
480i59.94	480i59.94		576i50	576i50
	720p59.94			720p50
	1080i59.94			1080i50
720p59.94	480i59.94		720p50	576i50
	720p59.94			720p50
	1080i59.94			1080i50
1080i59.94	480i59.94		1080i50	576i50
	720p59.94			720p50
	1080i59.94			1080i50
1080sf23.98	480i59.94			
1080sf23.98	1080i59.94			

The VC100 supports the following additional format conversions with the SDSTDS Package:

Input	Output		Input	Output
480i59.94	576i50		576i50	480i59.94
	720p50			720p59.94
	1080i50			1080i59.94

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Packages

The VC100 is available in the following product configurations:

	Single Channel Configurations
VC100SE-LCP	**Up/Down/Cross Converter & Synchronizer** - SD/HD-SDI Video & 16 Embedded Audio I/O with Local Control Panel, Redundant Power Supply
VC100SAA-LCP-READY	**Up/Down/Cross Converter & Synchronizer** - SD/HD-SDI Video & 16 Embedded /16 AES/ 8 Analog audio I/O with Local Control Panel & Redundant Power Supply
VC100SCC-LCP-READY	**Up/Down/Cross Converter & Synchronizer** - Composite/Component SD/HD-SDI Video & 16 Embedded Audio I/O with Local Control Panel & Redundant Power Supply
VC100SCCAA-LCP-READY	**Up/Down/Cross Converter & Synchronizer** - Composite/Component/SD/HD-SDI Video, Including DVI 108060p O/P & 16 Embedded/16 AES/ 8Analog audio I/O with Local Control Panel, Redundant Power Supply
	Dual Channel Configurations
VC100SE-LCP-2CH	**Up/Down/Cross Converter & Synchronizer with Two Fully Independent Channels** - SD/HD-SDI Video & 16 Embedded Audio I/O with Local Control Panel, Redundant Power Supply
VC100SAA-LCP-2CH-READY	**Up/Down/Cross Converter & Synchronizer with Two Fully Independent Channels** - SD/HD-SDI Video & 16 Embedded /16 AES/ 8 Analog audio I/O & Audio Cable Assembly. Local Control Panel, Redundant Power Supply
VC100SCC-LCP-2CH-READY	**Up/Down/Cross Converter & Synchronizer with Two Fully Independent Channels** - Composite/Component SD/HD-SDI Video, Including DVI 1080p60 Output & 16 Embedded Audio I/O with Local Control Panel & Redundant Power Supply
VC100SCCAA-LCP-2CH-READY	**Up/Down/Cross Converter & Synchronizer with Two Fully Independent Channels** - Composite/Component/SD/HD-SDI Video, Including DVI 1080p60 O/P & 16 Embedded/ 16 AES/ 8 Analog audio I/O & Audio Cable Assembly. Local Control Panel, Redundant Power Supply
	Basic Options (Per System)
VC1-DUALOUT	**1 in, 2 out option for Single Channel units**
VC1-AES-XLR	**2-meter Multi-Pin AES Break out cable on XLR-3**
VC1-AES-BNC	**2-meter Multi-Pin AES Break out cable on BNC**
VC1-ANA-XLR	**2-meter Multi-Pin Analog Audio Break out cable on XLR-3**
VC1-SDNR	**Motion Adaptive SD Noise Reduction (Single-Channel Systems)**
VC1-SDNR-2CH	**Motion Adaptive SD Noise Reduction (Dual-Channel Systems)**

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	Advanced Options
VC1-1-2CH	Single Channel Upgrade to Full Dual Channel (for a Single Channel System)
VC1-Dual-2CH	Dual Out System Upgrade to Two Channel System (for a Single Channel System)
VC1- CCON	Enabling of Analog Video Board
VC1-AAON	Enabling of AES & Analog Audio Board
VC1-HDNR	Motion Adaptive SD/HD Noise Reduction per system (Single Channel System)
VC1-HDNR-2CH	Motion Adaptive SD/HD Noise Reduction per system (Dual Channel System)
VC1-SDSTDS	SD Only Standards & Frame Rate Conversion Option (Single Channel System)
VC1-SDSTDS-2CH	SD Only Standards & Frame Rate Conversion Option (Dual Channel System)
	VC100 Best Picture Always (BPA) Hardware Coverage
BPA-HW-VC100	**Annual BPA Program for VC100** provides one additional year of hardware coverage

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Applications

Up-/Down-conversion
In situations where the highest image quality up- or down-conversion is necessary, Teranex's VC100 uses proprietary PixelMotion™ De-interlacing, 3:2 Detection, and Detail Enhancement combined with a powerful array processing module, provides the best image solution.

The first step in the conversion process is to identify whether the input material is video or film originated. The identification process happens in a fully automatic mode and selects either PixelMotion De-interlacing for video based material or 3:2 Detection for film based material. The goal is to apply the appropriate filter in order to recover the full vertical resolution of the input material.

PixelMotion de-interlacing produces perfect progressive frames in preparation for further processing. The processing aperture is adjusted on a pixel-by-pixel basis, which preserves all of the detail of the original interlaced image. Additionally, the filter eliminates "jaggies" in the output image, providing well-defined edges on objects and producing the sharpest images possible.

3:2 Detection recognizes the redundant fields inserted by the telecine during the conversion of film to video. This advanced 3:2 pull-down filter avoids frame rate conversion artifacts and provides the highest vertical resolution and motion quality.

Since the quality of the video de-interlacing is so high, there will be no difference visible in the vertical resolution seen with film originated material and that of the de-interlaced video originated material.

Once the image has been de-interlaced and up-converted, Detail Enhancement can be applied to the image to further sharpen and enhance the output. This filter adds an additional level of image quality by helping to better define the detail in the up-converted image. This is achieved by detecting the edges of objects and adjusting the contrast ratio around those objects to help separate them from the background.

Frame-rate Conversion
Moving images exist in three dimensions. Firstly, in the horizontal direction, images are made up of individual pixels. Secondly, in the vertical direction, they are made up of the lines contained in the field or frame. The combination is referred to as the spatial domain. Thirdly, the motion image is composed of a number of fields or frames per second, which is referred to as the temporal domain.

The process of frame-rate, or standards, conversion is a form of sample rate conversion in two or three of the above dimensions. It consists of expressing moving images sampled on one three-dimensional sampling lattice to a different three-dimensional lattice.

A process called interpolation is used to convert between these various spaces. Interpolation is defined as computing the value of a sample, or samples, which lie outside the sampling matrix of the source signal. In other words, it is the process of computing the values of output samples that lie between the input samples.

Teranex's per-pixel processing allows the processing aperture to be adjusted on a pixel-by-pixel basis, which preserves all of the detail of the original image.

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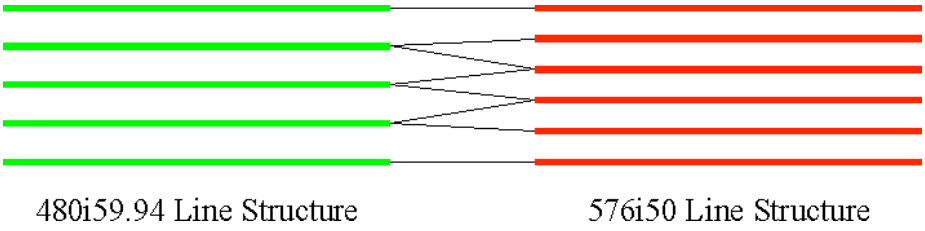
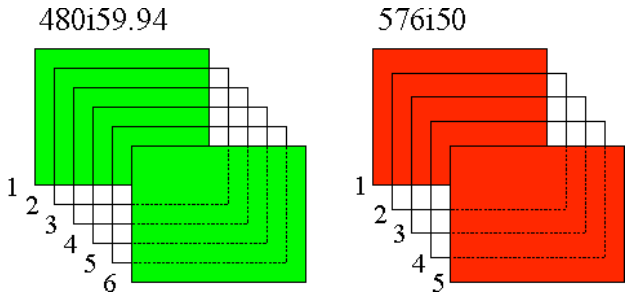
Frame-rate conversions generally involve changing the number of lines and fields (or frames) per second in an image. Examples of standards conversions include:

480i59.94 to 576i50
720p59.94 to 1080i50
1080i59.94 to 1080i50

If we look at a standards conversion from 480i59.94 to 576i50, we need to change two of the three parameters of the signal. The first is the number of lines in each field. A 480i signal has 240 lines per field while the 576i signal has 288 lines, as shown below.



The second parameter, which needs to be changed is the number of fields per second. The 480i signal has 59.94 fields per second while the 576i signal has 50, as shown below.



The third parameter, the number of pixels on each active picture line, does not change significantly between 480i and 576i.

Conversions involving high definition I/O require that all three domains must be changed. Examples include:

480i59.94 to 1080i50
1080i59.94 to 576i50
480i59.94 to 1080p23.98-sf

Frame Synchronizing
Frame Synchronization is the ability to propagate and lock a non-synchronous video signal throughout one's existing genlocked video system. The non-synchronous signal will be genlocked (timed or phased) and "Frame Synch'd" in the vertical and horizontal domains to the house reference signal, usually a Black Burst or HD Tri-Level sync signal.

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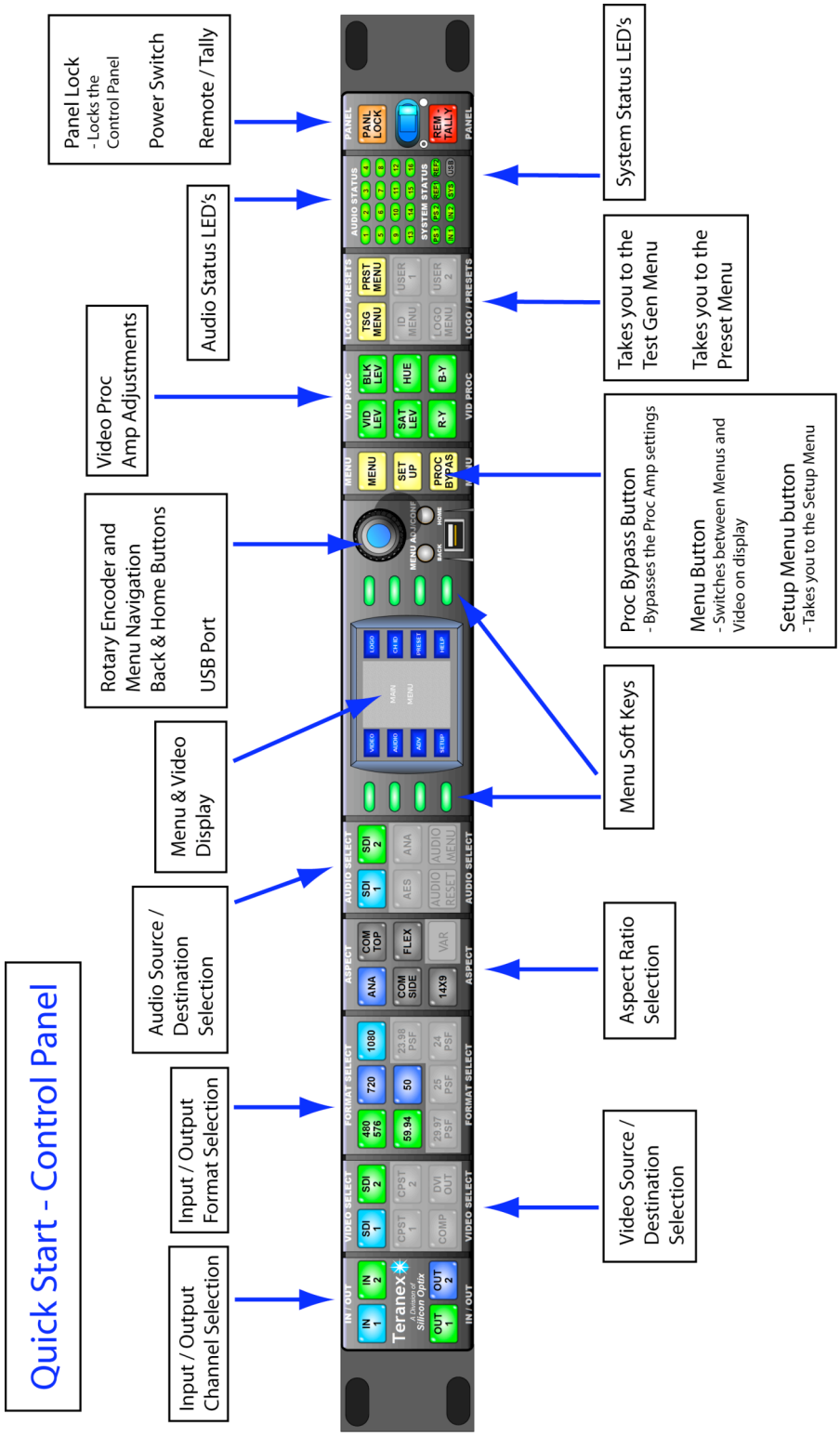
Quick Start


Quick Start - Control Panel
Input / Output Channel Selection
Input / Output Format Selection
Audio Source / Destination Selection
Menu & Video Display
Rotary Encoder and Menu Navigation
Back & Home Buttons
USB Port
Video Proc Amp Adjustments
Audio Status LED's
Panel Lock
- Locks the Control Panel
Power Switch
Remote / Tally
Video Source / Destination Selection
Aspect Ratio Selection
Menu Soft Keys
Proc Bypass Button
- Bypasses the Proc Amp settings
Menu Button
- Switches between Menus and Video on display
Setup Menu button
- Takes you to the Setup Menu
Takes you to the Test Gen Menu
Takes you to the Preset Menu
System Status LED's

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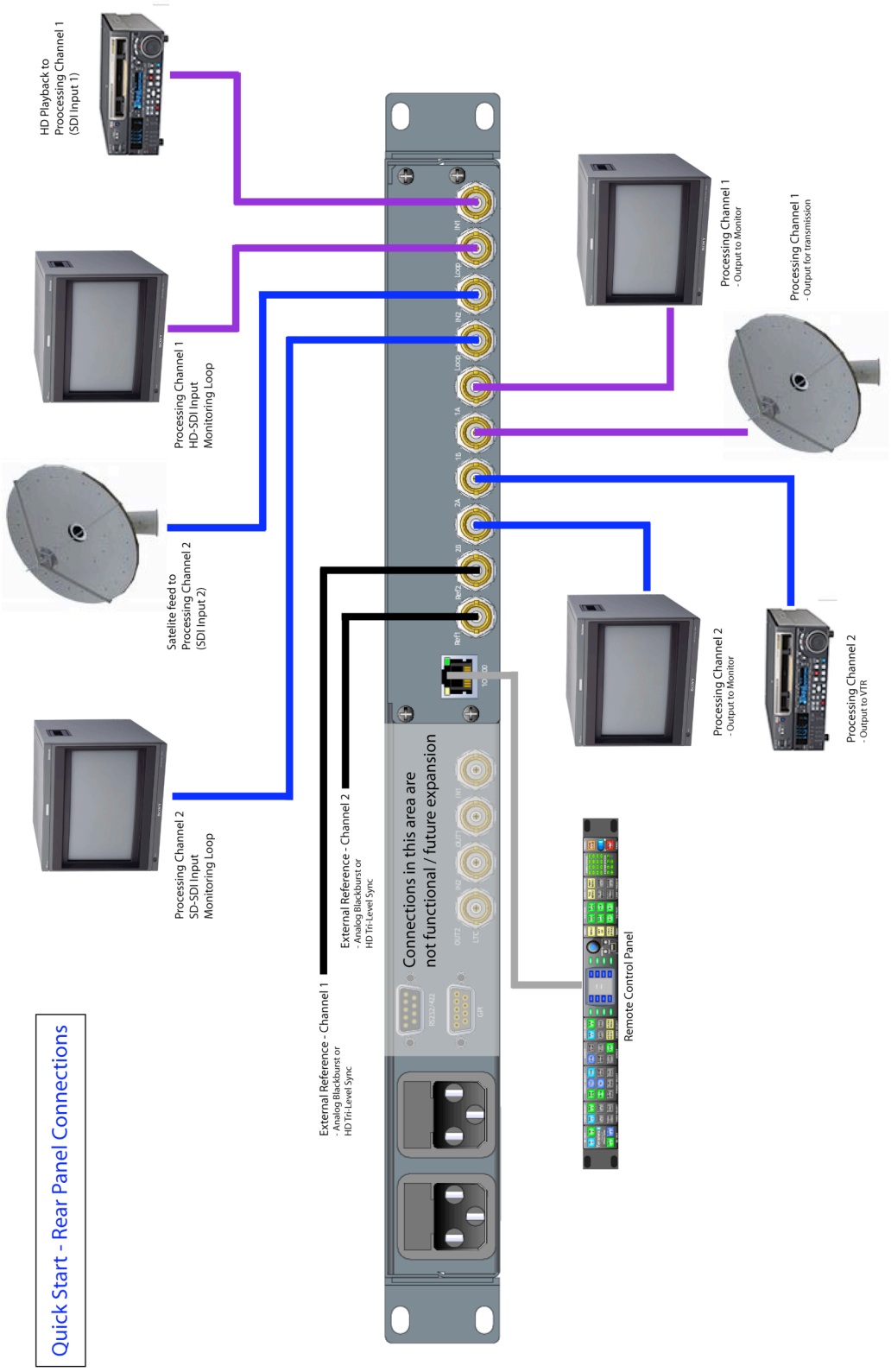
Quick Start - Rear Panel Connections
HD Playback to Proocessing Channel 1 (SDI Input 1)
Processing Channel 1 HD-SDI Input Monitoring Loop
Satelite feed to Processing Channel 2 (SDI Input 2)
Processing Channel 2 SD-SDI Input Monitoring Loop
External Reference - Channel 1 - Analog Blackburst or HD Tri-Level Sync
External Reference - Channel 2 - Analog Blackburst or HD Tri-Level Sync
Connections in this area are not functional / future expansion
Remote Control Panel
Processing Channel 1 - Output to Monitor
Processing Channel 1 - Output for transmission
Processing Channel 2 - Output to Monitor
Processing Channel 2 - Output to VTR

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Installation

Getting assistance with the VC100
This manual will help in the operation of the Teranex VC100. It provides an overview of features and procedures to accomplish all of the tasks this product can perform.

However, if you need further assistance, please contact:

24-hour Technical Support Phone:
For US & Canada: 1.877.2.TERANEX (1.877.283.7263)
International: 1.407.858.6000

Technical Support e-mail:
support@teranex.com

Technical Support web site:
www.teranex.com/support

Servicing
Only authorized service personnel should open the unit. Disconnect AC sources to the power supply(ies) before servicing.

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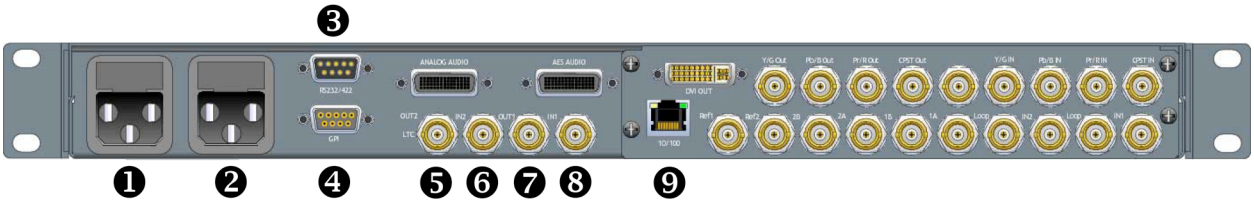
Rear Panel (From Left to Right)

Standard Connections



1. PS1 – Mains input 1
    a. 90-110V @ 60Hz / 200-220V @ 50Hz, Auto Detect

2. PS2 – Mains input 2
    a. 90-110V @ 60Hz / 200-220V @ 50Hz, Auto Detect

3. RS232/RS422 – Serial Port
    a. 1x 9-pin-D-Male, Selectable RS232 or RS422
    b. User adjustable baud rate

4. GPI – General Purpose Interface – Not functional / Future expansion
    a. 1x 9-pin-D-Female

5. Linear Time Code (LTC) – Out 2 (video processing channel 2) - Not functional / Future expansion
    a. 1x BNC, LTC output

6. Linear Time Code (LTC) – In 2 (video processing channel 2) - Not functional / Future expansion
    a. 1x BNC, LTC input

7. Linear Time Code (LTC) – Out 1 (video processing channel 1) - Not functional / Future expansion
    a. 1x BNC, LTC output

8. Linear Time Code (LTC) – In 1 (video processing channel 1) - Not functional / Future expansion
    a. 1x BNC, LTC input

9. Ethernet Port (10/100 BaseT)
    a. RJ-45

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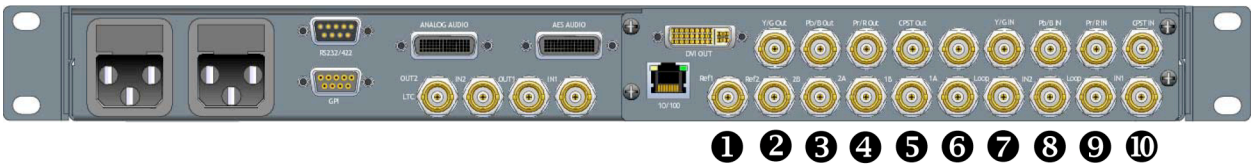
Digital Video Input/Output & Reference Input



1. Reference Input 1
    a. 1x BNC, SD analog blackburst, HD tri-level sync (interlaced or progressive)

2. Reference Input 2
    a. 1x BNC, SD analog blackburst, HD tri-level sync (interlaced or progressive)

3. SD/HD-SDI Output 2B (video processing channel 2)
    a. 1x BNC

4. SD/HD-SDI Output 2A (video processing channel 2)
    a. 1x BNC

5. SD/HD-SDI Output 1B (video processing channel 1)
    a. 1x BNC

6. SD/HD-SDI Output 1A (video processing channel 1)
    a. 1x BNC

7. SD/HD-SDI Input 2 Loop (Active)
    a. 1x BNC

8. SD/HD-SDI Input 2 (video processing channel 2)
    a. 1x BNC

9. SD/HD-SDI Input 1 Loop (Active)
    a. 1x BNC

10. SD/HD-SDI Input 1 (video processing channel 1)
    a. 1x BNC

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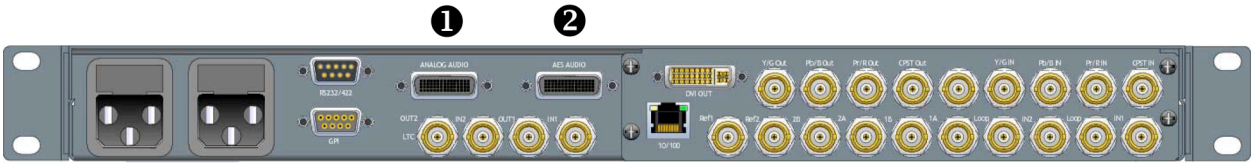
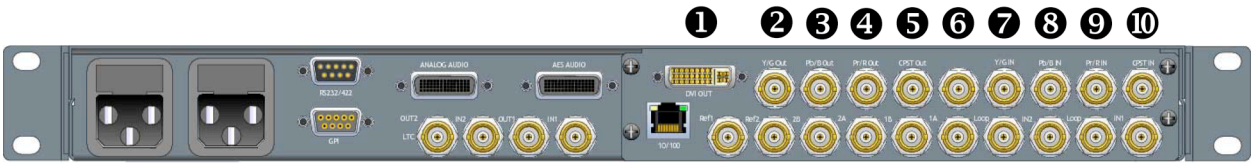
Analog & AES Audio Connection (NOTE: Requires Analog & AES Audio Option Board)



1. Analog Audio Input/Output
    a) High Density Molex LFH Connector

2) AES Audio Input/Output
    a) High Density Molex LFH Connector

Analog Video Input/Output & DVI Output (NOTE: Requires Analog Video Input/Output Option Board)



1. DVI-I Output
    a. 1x DVI Connector

2. Analog Component Y/G Output
    a. 1x BNC

3. Analog Component Pb/B/C Output
    a. 1x BNC

4. Analog Component Pr/R Output
    a. 1x BNC

5. Analog Composite Output
    a. 1x BNC

6. No Connection
    a. 1x BNC

7. Analog Component Y/G Input
    a. 1x BNC

8. Analog Component Pb/B/C Input
    a. 1x BNC

9. Analog Component Pr/R Input
    b. 1x BNC

10. Analog Composite Input
    b. 1x BNC

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Operations

This section describes the control panel for the VC100 Video Computer. The panel can operate in one of two modes, local or remote.

Local Control (Full)
In the Local Control mode, the panel is physically mounted to the VC100 frame and controls this one unit. The panel establishes communication with the frame and is powered via a multi-pin header connector located between the two units.

Remote Control (Full)
In the Remote Control mode, the panel is mounted apart from the chassis. It is connected to the chassis via an Ethernet connection and powered by an external power supply. The Remote panel can be assigned to any VC100 chassis on the network. Refer to page 105 in this manual for details on connecting a Remote panel to a VC100 chassis.

Control Panel Layout
The control panel is divided into 10 Sections.
- Section 1 – Input / Output channel selection
- Section 2 – Video source selection
- Section 3 – Format (video line & frame-rate) selection
- Section 4 – Aspect Ratio selection
- Section 5 – Audio source selection
- Section 6 – Display, rotary encoder, USB port
- Section 7 – Proc Amp
- Section 8 – Logo, Channel ID
- Section 9 – Audio and System status LEDS
- Section 10 – Remote, Tally, Power Switch

Function buttons (Qty 48)
- "Soft" buttons associated with panel functions such as input select, video select, etc.

Display buttons (Qty 10)
"Soft" buttons associated with the LCD display.
- 8 buttons for use with display
- 1 button for the Menu "Home" function
- 1 button for the Menu "Back" function

Rotary Encoder
- The rotary encoder is a linear encoder with push function.

Power switch
- A power switch is located at the righthand end of the control panel
- The power switch controls power for the control panel and the VC100 chassis by inhibiting the power supplies of the VC100.

LED's
The VC100 Control Panel supports the following.
- Tri-Color LED's (Qty 31)
  - The LED's are red, green, blue tri-color LED's
  - All LED's in Section 1 to 5 are tri-color
- Bi-Color LED's (Qty 49)
  - The LED's are red, green, blue tri-color LED's, wired as bi-color
  - All LED's in Section 6 to 10 are configured as bi-color

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LCD Display
The VC100 Control Panel supports the following.

- 320 x 240 Color LCD Display

Control Panel Interfaces
The VC100 Control Panel supports the following:

- **USB 1.1 port**
  - The port is located on the front of the control panel
  - The port will be used to future applications

- **Ethernet port (for remote connections)**
  - The Ethernet port is located on the rear of the control panel
  - The Ethernet port is 10/100 BaseT
  - The Ethernet port has a user assignable IP address
  - The Ethernet connection supports DHCP

- **Multi-pin header connector**
  - The Multi-pin header connector is located on the rear of the control panel
  - USB 1.1
  - High-speed serial
  - Video data
  - Power

- **Power**
  - When used in the local configuration, the power connection from the VC100 chassis to the control panel, is a multi-pin header connector
  - When used in the remote configuration, the control panel utilizes an external 12V DC power supply.
  - The power connector is located on the rear of the control panel

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Control Panel Logic

Note: Section 1, Input/Output channel selection drives the state of all other sections of the control panel and the MENUTREE.

There are two primary states for the control panel button/LED logic.

- The first is "Active" mode, shown by solid LED's. This mode shows the current state of the selected input or output channel.
- The second is the "Update" mode, shown by flashing LED's. This mode allows the user to change the state of the currently selected input or output channel.

Color Code

Button Color	State	Mode	Comments
Red	Flashing	Update	Error condition
Orange	Flashing	Update	Warning condition
Green	Solid	All	Function is available, but not selected
Cyan	Solid	Active	Shows association with currently selected input or output
Blue	Solid	Active	Shows current state of selected input or output (all sections follow)
Blue	Flashing	Update	Shows that selected input or output is in Update mode (all sections follow)

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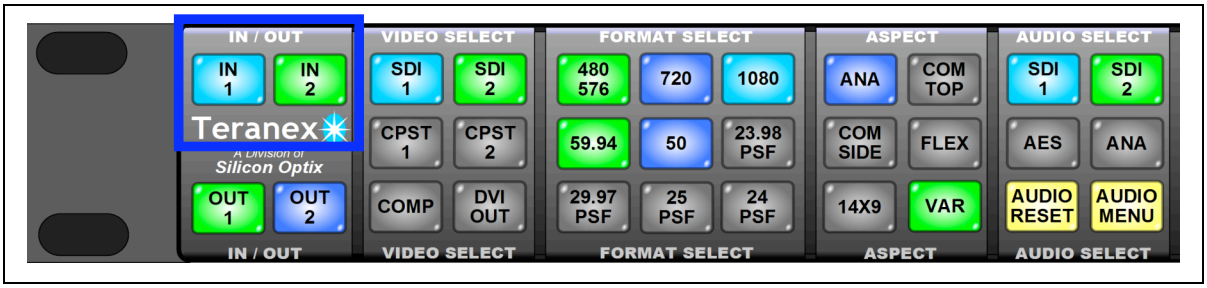
Input/Output – Section 1



Input

IN 1 (Button) – Allows the user to configure video processing channel 1 input. The first press will place the system into the Active mode (solid LED's); the second press will place the system into the Update mode (flashing LED's)

Button Color	State	Mode	Comments
Red	Flashing	Update	No input signal present on SDI 1
Orange	Flashing	Update	Currently selected format does not match input signal on SDI 1 (manual input mode)
Green	Solid	All	IN 1 is available, but not selected
Cyan	Solid	Active	Shows association with currently selected output
Blue	Solid	Active	Shows current state of IN 1 (all sections follow)
Blue	Flashing	Update	Shows that IN 1 is in Update mode (all sections follow)

IN 2 (Button) – Allows the user to configure processing channel 2 input. The first press will place the system into the Active mode (sold LED's); the second press will place the system into the Update mode (flashing LED's)

Button Color	State	Mode	Comments
Red	Flashing	Update	No input signal present on SDI 2
Orange	Flashing	Update	Currently selected format does not match input signal on SDI 2 (manual input mode)
Green	Solid	All	IN 2 is available, but not selected
Cyan	Solid	Active	Shows association with currently selected output
Blue	Solid	Active	Shows current state of IN 2 (all sections follow)
Blue	Flashing	Update	Shows that IN 2 is in Update mode (all sections follow)
Off	n/a	All	When disabled by keyed package

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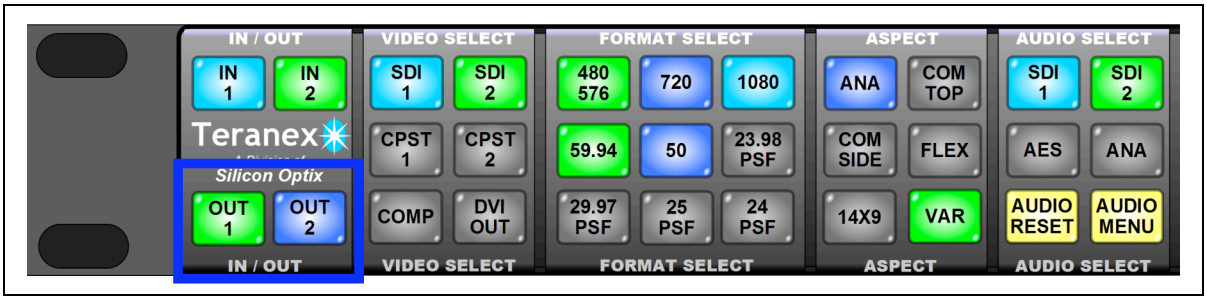

Output

OUT 1 (Button) – Allows the user to configure processing channel 1 output. The first press will place the system into the Active mode (solid LED's); the second press will place the system into the Update mode (flashing LED's)

Button Color	State	Mode	Comments
Green	Solid	All	OUT 1 is available, but not selected
Cyan	Solid	Active	Shows association with currently selected Input
Blue	Solid	Active	Shows current state of OUT 1 (all sections follow)
Blue	Flashing	Update	Shows that OUT 1 is in Update mode (all sections follow)

OUT 2 (Button) – Allows the user to configure processing channel 2 output. The first press will place the system into the Active mode (solid LED's); the second press will place the system into the Update mode (flashing LED's)

Button Color	State	Mode	Comments
Green	Solid	All	OUT 2 is available, but not selected
Cyan	Solid	Active	Shows association with currently selected Input
Blue	Solid	Active	Shows current state of OUT 2 (all sections follow)
Blue	Flashing	Update	Shows that OUT 2 is in Update mode (all sections follow)
Off	n/a	All	When disabled by keyed package

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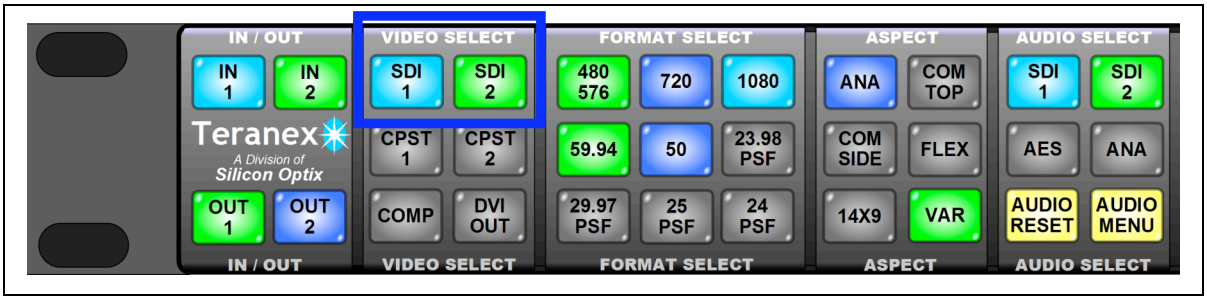
Video Select - Section 2



SDI 1 (Button) - Assigns the SDI 1 Input to the currently selected input channel or SDI 1 output to the currently selected output channel. After selecting, press the ROTARY ENCODER to accept.

Button Color	State	Mode	Comments
Red	Flashing	Update	No input signal (only when selected)
Green	Solid	Update	Available but not selected
Cyan	Solid	Active	Shows association with currently selected input or output
Blue	Solid	All	Shows the state of the currently selected input or output
Blue	Flashing	Update	NEW source or destination selected - Press the ROTARY ENCODER to confirm

Note: SDI IN 1 will always be associated with SDI OUT 1.
SDI IN 1 may also be associated with SDI OUT 2 if used in the 1-in/2-out configuration.

SDI 2 (Button) - Assigns the SDI 2 Input to the currently selected input channel or SDI 2 output to the currently selected output channel. After selecting, press the ROTARY ENCODER to accept.

Button Color	State	Mode	Comments
Red	Flashing	Update	No input signal (only when selected)
Green	Solid	Update	Available but not selected
Cyan	Solid	Active	Shows association with currently selected input or output
Blue	Solid	All	Shows the state of the currently selected input or output
Blue	Flashing	Update	NEW source or destination selected - Press the ROTARY ENCODER to confirm

Note: SDI IN 2 will always be associated with SDI OUT 2.

CPST 1 (Button) - Not functional / Future expansion

CPST 2 (Button) - Not functional / Future expansion

COMP (Button) - Not functional / Future expansion

DVI OUT (Button) - Not functional / Future expansion

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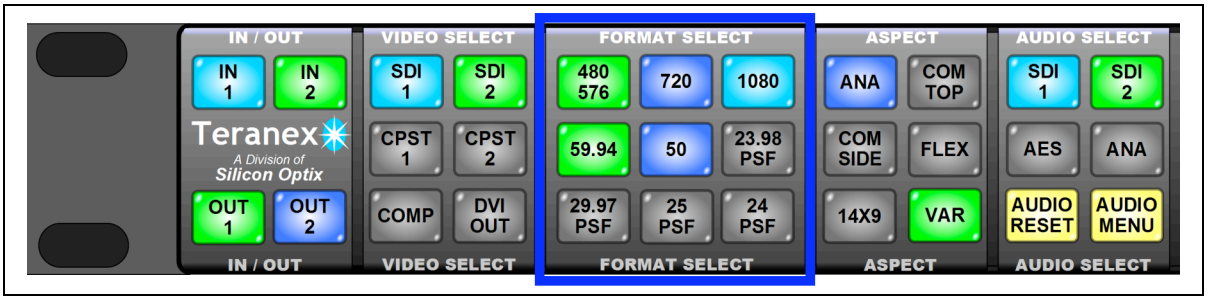
Format / Frame-rate Select – Section 3



480/576 (Button) – If an input channel is selected, on first press the system sets the selected input to 480 lines. On second press, the input is set to 576 lines. If one of the output channels is selected, on first press the selected output is set to 480 lines. On the second press, the output is set to 576 lines. After selecting, press the ROTARY ENCODER to accept.

Button Color	State	Mode	Comments
Green	Solid	Update	Available but not selected
Cyan	Solid	Active	Shows association with currently selected input or output
Blue	Solid	All	Shows the state of the currently selected input or output
Blue	Flashing	Update	NEW source or destination selected – Press the ROTARY ENCODER to confirm

720 (Button) – Sets the line rate of the currently selected input or output to 720. After selecting, press the ROTARY ENCODER to accept.

Button Color	State	Mode	Comments
Green	Solid	Update	Available but not selected
Cyan	Solid	Active	Shows association with currently selected input or output
Blue	Solid	All	Shows the state of the currently selected input or output
Blue	Flashing	Update	NEW source or destination selected – Press the ROTARY ENCODER to confirm

1080 (Button) - Sets the line rate of the currently selected input or output to 1080. After selecting, press the ROTARY ENCODER to accept.

Button Color	State	Mode	Comments
Green	Solid	Update	Available but not selected
Cyan	Solid	Active	Shows association with currently selected input or output
Blue	Solid	All	Shows the state of the currently selected input or output
Blue	Flashing	Update	NEW source or destination selected – Press the ROTARY ENCODER to confirm

59.94 (Button) - Sets the frame rate of the currently selected input or output to 59.94Hz. After selecting, press the ROTARY ENCODER to accept.

Button Color	State	Mode	Comments
Green	Solid	Update	Available but not selected
Cyan	Solid	Active	Shows association with currently selected input or output
Blue	Solid	All	Shows the state of the currently selected input or output
Blue	Flashing	Update	NEW source or destination selected – Press the ROTARY ENCODER to confirm

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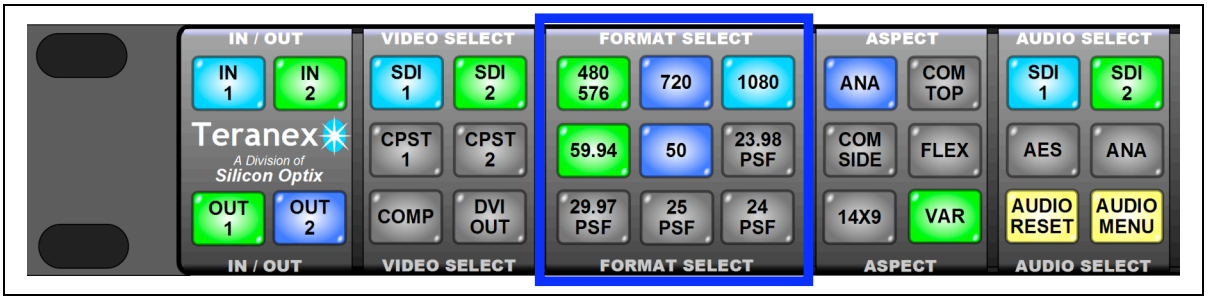

50 (Button) - Sets the frame rate of the currently selected input or output to 50Hz. After selecting, press the ROTARY ENCODER to accept.

Button Color	State	Mode	Comments
Green	Solid	Update	Available butnot selected
Cyan	Solid	Active	Shows association with currently selected input or output
Blue	Solid	All	Shows the state of the currently selected input or output
Blue	Flashing	Update	NEW source or destination selected – Press the ROTARY ENCODER to confirm

29.97 PSF (Button) - Not functional / Future expansion

23.98 PSF (Button) - Not functional / Future expansion

25 PSF (Button) - Not functional / Future expansion

24 PSF (Button) - Not functional / Future expansion

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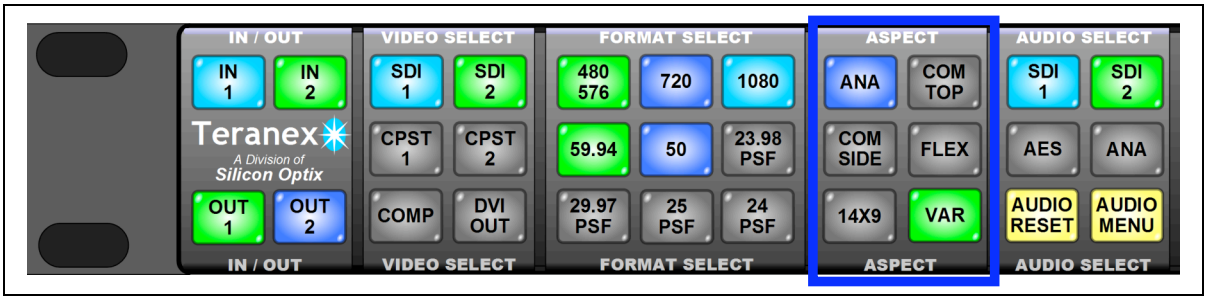
Aspect - Section 4



ANA (Button) - Sets the aspect ratio of the selected processing channel to Anamorphic. After selecting, press the ROTARY ENCODER to accept.

Button Color	State	Mode	Comments
Green	Solid	Update	Available but not selected
Cyan	Solid	Active	Shows association with currently selected processing channel
Blue	Solid	All	Shows the state of the currently selected processing channel
Blue	Flashing	Update	NEW selection – Press the ROTARY ENCODER to confirm

COM TOP (Button) - Sets the aspect ratio of the selected processing channel to Common Top & Bottom. After selecting, press the ROTARY ENCODER to accept.

Button Color	State	Mode	Comments
Green	Solid	Update	Available but not selected
Cyan	Solid	Active	Shows association with currently selected processing channel
Blue	Solid	All	Shows the state of the currently selected processing channel
Blue	Flashing	Update	NEW selection - Press the ROTARY ENCODER to confirm

COM SIDE (Button) - Sets the aspect ratio of the selected processing channel to Common Sides. After selecting, press the ROTARY ENCODER to accept.

Button Color	State	Mode	Comments
Green	Solid	Update	Available but not selected
Cyan	Solid	Active	Shows association with currently selected processing channel
Blue	Solid	All	Shows the state of the currently selected processing channel
Blue	Flashing	Update	NEW selection - Press the ROTARY ENCODER to confirm

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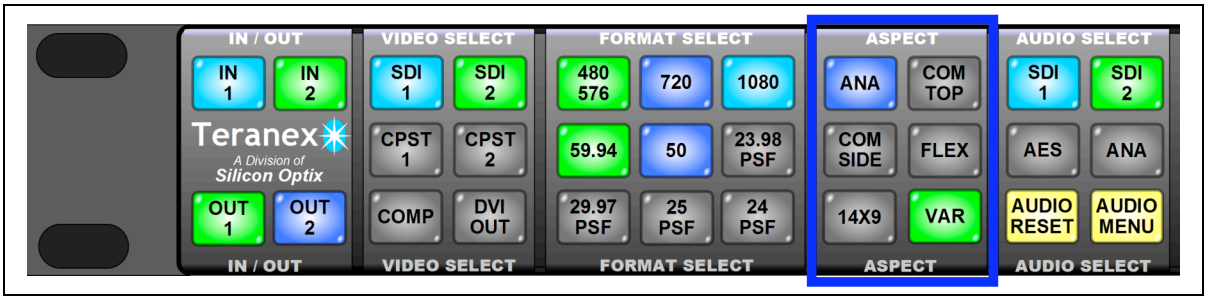

FLEX (Button) - Sets the aspect ratio of the selected processing channel to Flexview. After selecting, press the ROTARY ENCODER to accept.

Button Color	State	Mode	Comments
Green	Solid	Update	Available but not selected
Cyan	Solid	Active	Shows association with currently selected processing channel
Blue	Solid	All	Shows the state of the currently selected processing channel
Blue	Flashing	Update	NEW selection - Press the ROTARY ENCODER to confirm
Off	n/a	All	720 or 1080 selected as input line-rate

14X9 (Button) – Sets the aspect ratio of the selected processing channel to 14:9. After selecting, press the ROTARY ENCODER to accept.

Button Color	State	Mode	Comments
Green	Solid	Update	Available but not selected
Cyan	Solid	Active	Shows association with currently selected processing channel
Blue	Solid	All	Shows the state of the currently selected processing channel
Blue	Flashing	Update	NEW selection - Press the ROTARY ENCODER to confirm

VAR (Button) – Not functional / Future expansion

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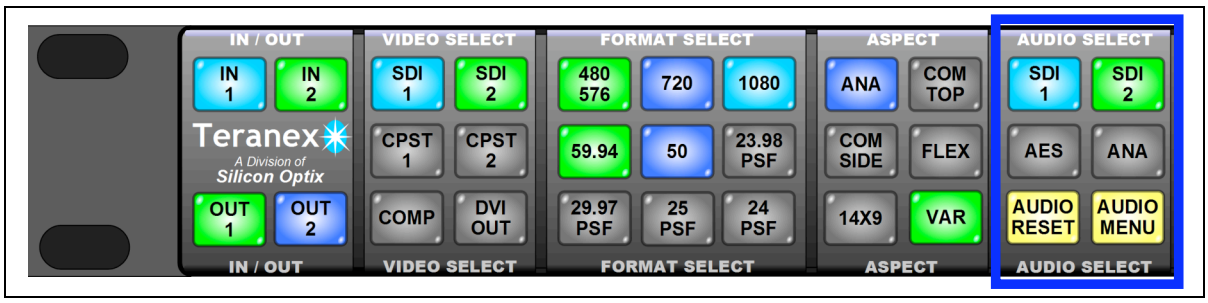
Audio Select – Section 5



SDI 1 (Button) – Assigns the embedded audio from the SDI 1 to the currently selected input or output channel. After selecting, press the ROTARY ENCODER to accept.

Button Color	State	Mode	Comments
Red	Flashing	Update	No input signal (only when selected)
Green	Solid	Update	Available but not selected
Cyan	Solid	Active	Shows association with currently selected input or output
Blue	Solid	All	Shows the state of the currently selected input or output
Blue	Flashing	Update	NEW source or destination selected - Press the ROTARY ENCODER to confirm
Off	n/a	All	Disabled if SDI 2 is selected as the input video source

SDI 2 (Button) – Assigns the embedded audio from the SDI 2 to the currently selected input or output channel. After selecting, press the ROTARY ENCODER to accept.

Button Color	State	Mode	Comments
Red	Flashing	Update	No input signal (only when selected)
Green	Solid	Update	Available but not selected
Cyan	Solid	Active	Shows association with currently selected input or output
Blue	Solid	All	Shows the state of the currently selected input or output
Blue	Flashing	Update	NEW source or destination selected - Press the ROTARY ENCODER to confirm
Off	n/a	All	Disabled if SDI 1 is selected as the input video source

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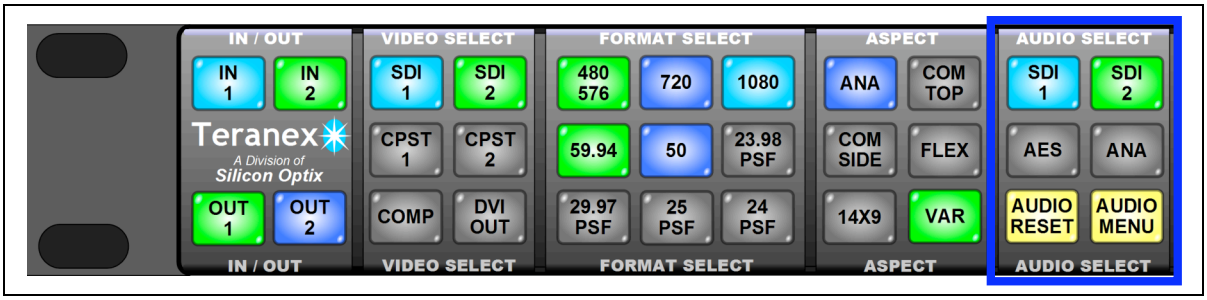

AES (Button) – Not functional / Future expansion

ANA (Button) – Not functional / Future expansion

AUDIO RESET (Button) – Not functional / Future expansion

AUDIO MENU (Button) - Not functional / Future expansion

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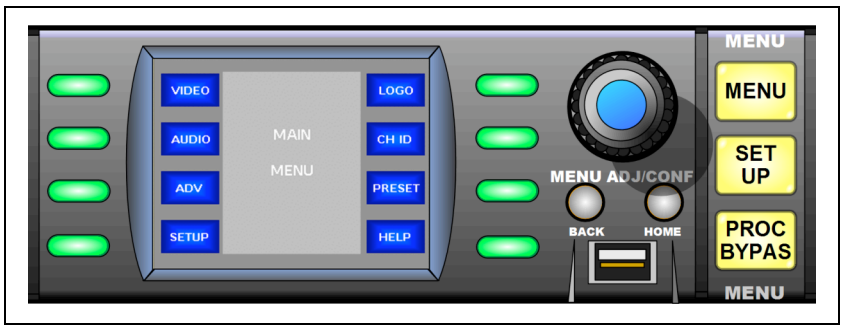
Graphical User Interface (GUI) and Menu Controls – Section 6



Display Controls (8 Buttons around display) - Assigned based on current MENUTREE page

Button Color	State	Mode	Comments
Green	Solid	All	Available but not selected
Yellow	Solid	All	Selected

Rotary Encoder

- Rotation – Used to navigate MENUTREE or adjust sliders
- Push – Used to select front panel button selections

Back (Button) – Takes you to the previous menu

- There is no LED associated with this button

Home (Button) – Takes you to the top of the MENUTREE (Main Menu)

- There is no LED associated with this button

MENU (Button) – Takes you to top level menu (Main Menu) on the MENUTREE. Will also switch between showing active video, from the currently selected input or output channel, and the MENUTREE on the Control Panel LCD display.

Button Color	State	Mode	Comments
Yellow	Solid	All	Alternates the display between active video and the MENUTREE

Note: Active video is not available when the unit is in Update mode

SETUP (Button) – Takes you to the Setup Menu on the MENUTREE

Button Color	State	Mode	Comments
Yellow	Solid	All	Takes you to the Setup Menu

PROC BYPAS (Button) – All Proc Amp, Detail Enhance, and Sharpness settings are disabled

Button Color	State	Mode	Comments
Yellow	Solid	Update	Proc Amp settings are applied to the selected processing channel
Yellow	Flashing	Update	Proc Amp settings are disabled on the selected processing channel

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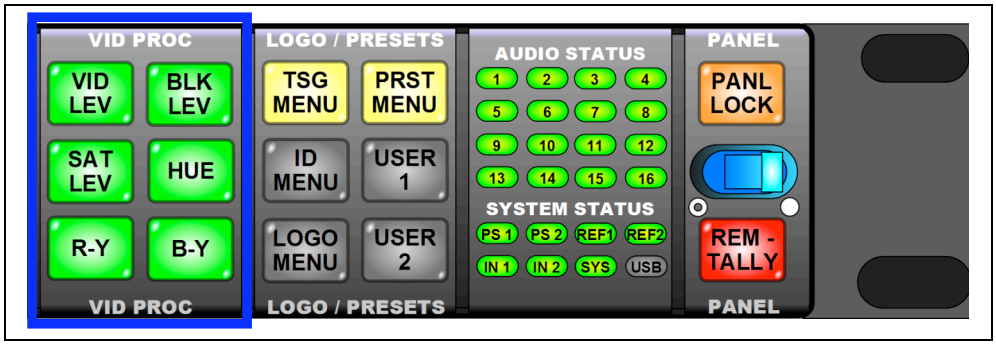
Vid Proc (Video Processing) – Section 7



VID LEV (Button) – Takes you to the VIDEO LEVEL control on the Proc Amp Menu of the MENUTREE. The ROTARY ENCODER will then be used to adjust the VIDEO LEVEL.

Button Color	State	Mode	Comments
Green	Solid	Update	Available but not selected
Blue	Flashing	Update	The control is active

BLK LEV (Button) – Takes you to the BLACK LEVEL control on the Proc Amp Menu of the MENUTREE. The ROTARY ENCODER will then be used to adjust the BLACK LEVEL.

Button Color	State	Mode	Comments
Green	Solid	Update	Available but not selected
Blue	Flashing	Update	The control is active

SAT LEV (Button) – Takes you to the SATURATION LEVEL control on the Proc Amp Menu of the MENUTREE. The ROTARY ENCODER will then be used to adjust the SATURATION LEVEL.

Button Color	State	Mode	Comments
Green	Solid	Update	Available but not selected
Blue	Flashing	Update	The control is active

HUE (Button) – Takes you to the HUE PHASE control on the Proc Amp Menu of the MENUTREE. The ROTARY ENCODER will then be used to adjust the HUE PHASE.

Button Color	State	Mode	Comments
Green	Solid	Update	Available but not selected
Blue	Flashing	Update	The control is active

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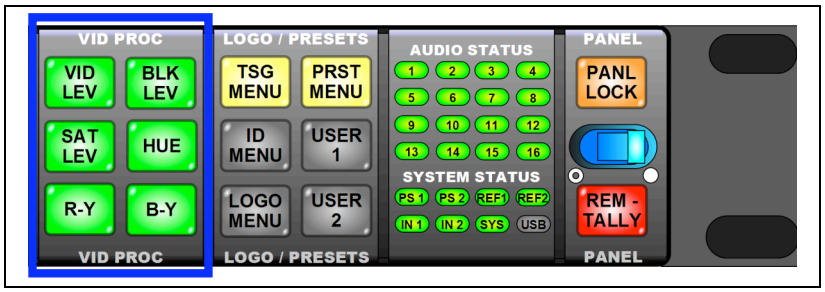

R-Y (Button) – Takes the user to the R-Y LEVEL control on the Proc Amp Menu of the MENUTREE. The ROTARY ENCODER will then be used to adjust the R-Y LEVEL.

Button Color	State	Mode	Comments
Green	Solid	Update	Available but not selected
Blue	Flashing	Update	The control is active

B-Y (Button) – Takes the user to the B-Y LEVEL control on the Proc Amp Menu of the MENUTREE. The ROTARY ENCODER will then be used to adjust the B-Y LEVEL.

Button Color	State	Mode	Comments
Green	Solid	Update	Available but not selected
Blue	Flashing	Update	The control is active

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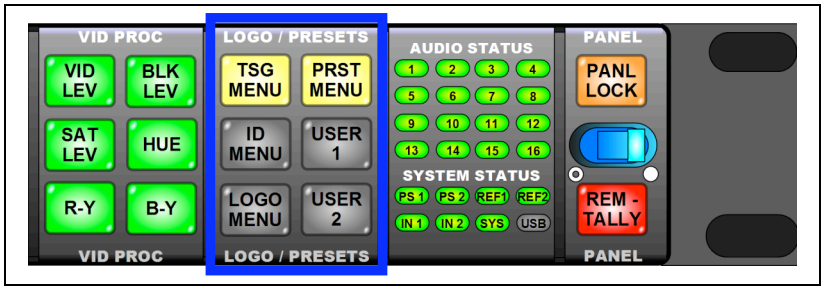
Logo / Presets – Section 8



TSG MENU (Button) – Takes the user to the Video Test Generator Menu of the MENUTREE.

Button Color	State	Mode	Comments
Yellow	Solid	Active	Takes you to the Test Generator Menu in the MENUTREE

ID MENU (Button) – Not functional / Future expansion

LOGO MENU (Button) – Not functional / Future expansion

PRST MENU (Button) – Takes the user to the User Presets Menu of the MENUTREE.

Button Color	State	Mode	Comments
Yellow	Solid	Active	Takes you to the Presets Menu in the MENUTREE

USER 1 (Button) – Not functional / Future expansion

USER 2 (Button) – Not functional / Future expansion

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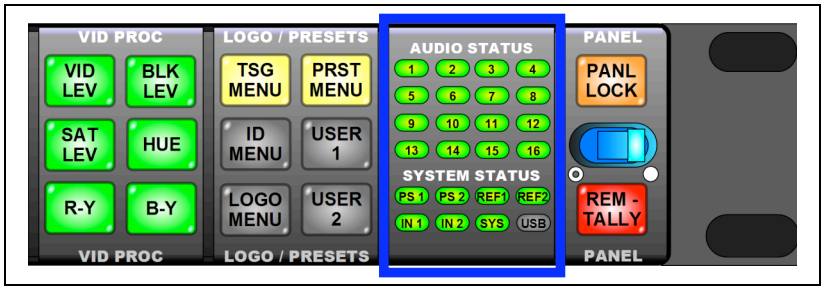
Audio Active & System Status – Section 9



AUDIO STATUS (LED's 1 – 16) – Shows the status of the audio channels for the currently selected video processing channel.

LED Color	State	Mode	Comments
Green	Solid	All	Active audio is present for selected processing channel
Yellow	Solid	All	DOLBY-E audio is present for selected processing channel
Red	Solid	All	Audio errors are present for selected processing channel
Off	n/a	All	No audio is present for selected processing channel

Note: Currently, active audio will be determined by group. For example, if group 1 is detected as present, LED's 1 – 4 shall be lit. Green = Active audio detected; OFF = no active audio detected

PS1 (LED) – Shows the status of Power Supply 1

LED Color	State	Mode	Comments
Green	Solid	All	Power Supply 1 is operating properly
Red	Flashing	All	Power Supply 1 has an Error condition
Off	n/a	All	Power Supply 1 is not present

PS2 (LED) – Shows the status of Power Supply 2

LED Color	State	Mode	Comments
Green	Solid	All	Power Supply 2 is operating properly
Red	Flashing	All	Power Supply 2 has an Error condition
Off	n/a	All	Power Supply 2 is not present

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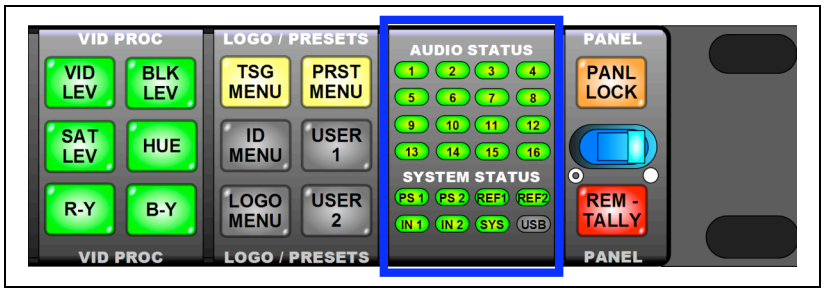

REF1 (LED) – Shows the status of the signal on External Reference Input 1

LED Color	State	Mode	Comments
Red	Flashing	All	Reference 1 and the output PLL's are not locked
Yellow	Flashing	All	Reference 1 is locked but the output PLL's are not locked
Green	Solid	All	Reference 1 and the output PLL's are locked
Off	n/a	All	Processing channel 1 is set to Input reference

REF2 (LED) - Shows the status of the signal on External Reference Input 2

LED Color	State	Mode	Comments
Red	Flashing	All	Reference 2 and the output PLL's are not locked
Yellow	Flashing	All	Reference 2 is locked but the output PLL's are not locked
Green	Solid	All	Reference 2 and the output PLL's are locked
Off	n/a	All	Processing channel 2 is set to Input reference

IN1 (LED) – Shows the status of the signal assigned to the input of video processing channel 1

LED Color	State	Mode	Comments
Red	Flashing	All	No input has been detected
Yellow	Flashing	All	Input is detected but does not match the currently selected input format
Green	Solid	All	Input is valid

IN2 (LED) – Shows the status of the signal assigned to the input of video processing channel 2

LED Color	State	Mode	Comments
Red	Flashing	All	No input has been detected
Yellow	Flashing	All	Input is detected but does not match the currently selected input format
Green	Solid	All	Input is valid

SYS (LED) – Shows the status of the overall system

LED Color	State	Mode	Comments
Red	Flashing	All	Critical system error
Yellow	Flashing	All	Non-critical system error
Green	Solid	All	System is operating normally

USB (LED) – Not functional / Future expansion

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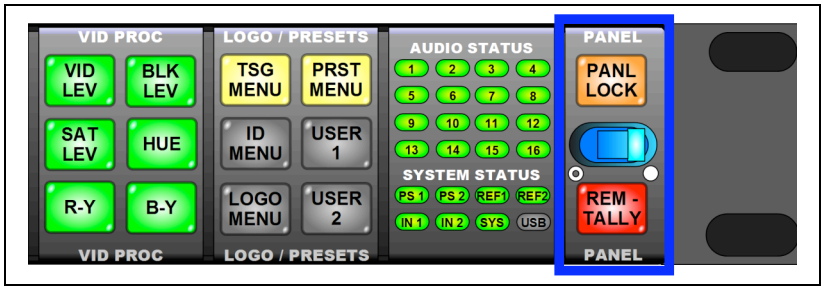
Panel – Section 10



NOTE: REM/TALLY status has GPI interface (GPI pins 7 and 8) for ON-AIR indication

PANL LOCK (Button) – Locks the Local Control Panel. To activate the PANEL LOCK, press and hold the button for 2 seconds.

Button Color	State	Mode	Comments
Orange	Solid	Active	Control panel operative – press & hold 2 sec. to LOCK PANEL
Orange	Flashing	Active	Control panel locked – press & hold 2 sec. to UNLOCK PANEL

Note: When the panel is locked, it will still update to show current status.

Power Switch – Inhibits both power supplies in the VC100 chassis (This control is not active when the panel is used in the remote configuration.)

Color	State	Mode	Comments
Blue	Solid	Active	Power On
Off	n/a	All	Power off

REM – TALLY (Button) - Not functional / Future expansion

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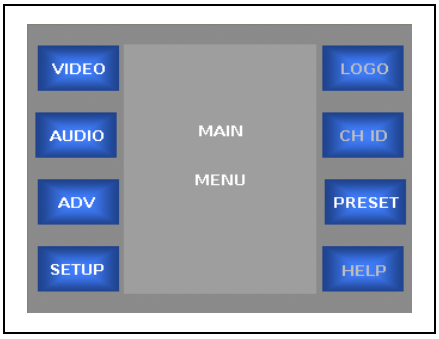
MENUTREE

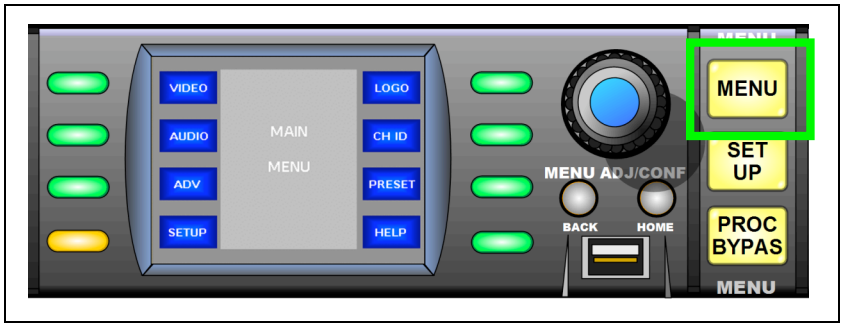
Main Menu

The Main Menu is the top menu in the VC100 MENUTREE. It provides access to the top level functions in the MENUTREE.



- **VIDEO** – Takes the user to the Video Menu
- **AUDIO** – Takes the user to the Audio Menu
- **ADV** – Takes the user to the Advanced Settings Menu
- **SETUP** – Takes the user to the Setup Menu
- **LOGO** – Not functional / Future expansion
- **CH ID** – Not functional / Future expansion
- **PRESET** – Takes the user to the User Preset Menu
- **HELP** – Not functional / Future expansion

The Main Menu can be reached at any time by pressing the HOME button on the control panel.



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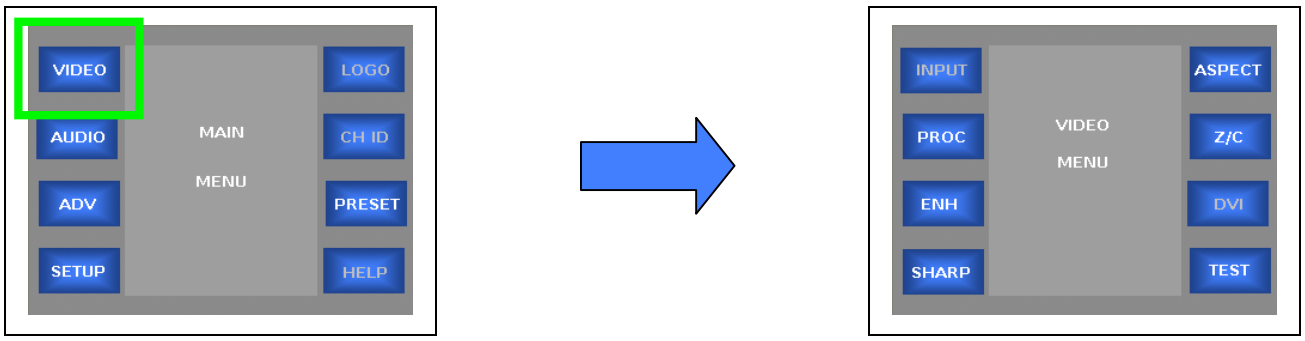
Video Menu



- **INPUT** – Not functional / Future expansion
- **PROC** – Takes the user to the Proc Amp Setting Menu
- **ENH** – Allows the user to adjust the Detail Enhance Setting
- **SHARP** – Takes the user to adjust the Sharpness Setting
- **ASPECT** – Takes the user to the Aspect Ratio Menu
- **Z/C** – Enables Zoom/Crop
- **DVI** – Not functional / Future expansion
- **TEST** – Takes the user to the Test Generator Menu

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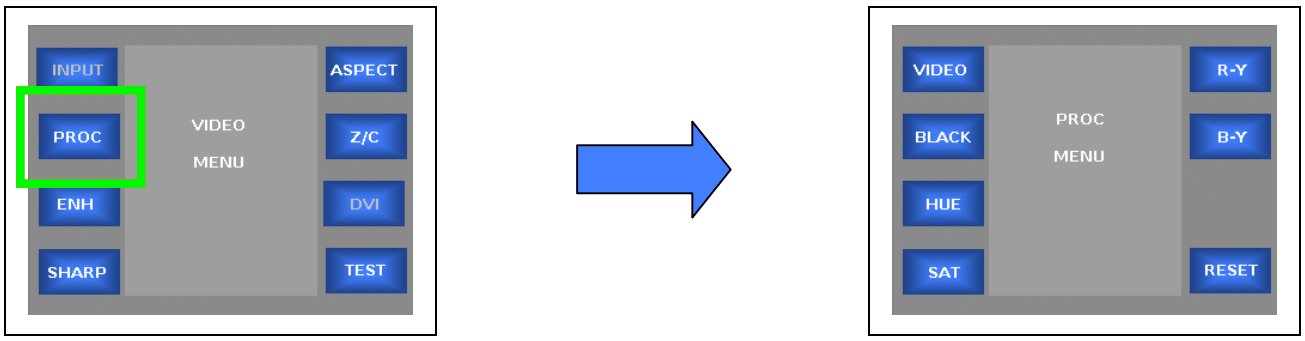
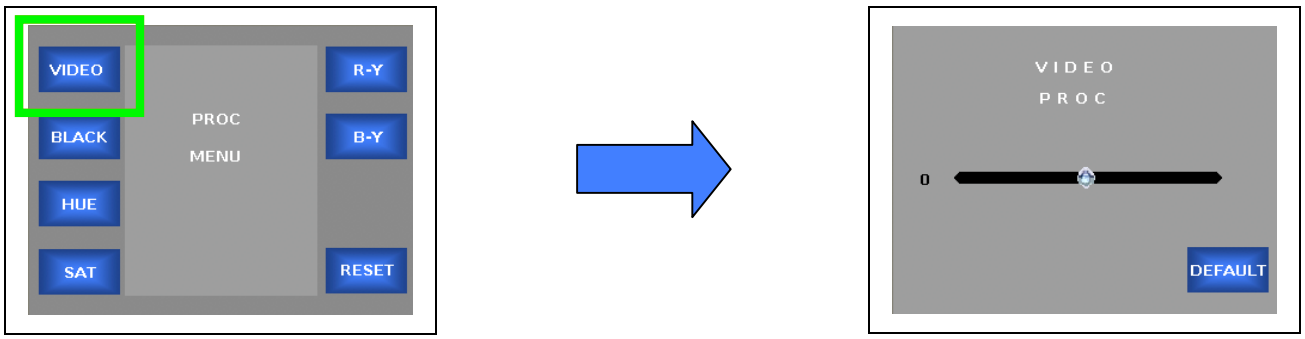
Proc Amp Menu



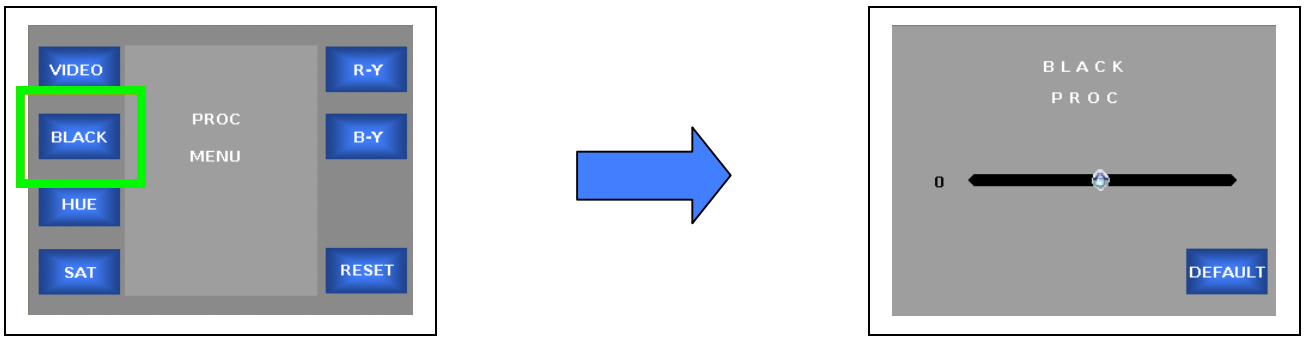
PROC – Takes the user to the Video Processing Amplifier Menu



VIDEO – Adjust the VIDEO LEVEL for the selected video processing channel. To adjust, turn the ROTARY ENCODER on the control panel. Press the DEFAULT soft button to go back to the default value.

- The range of adjustment is -6.0dB to +6.0dB.
- The default setting is 0dB.

Press the BACK button to move to the previous menu.
Press the Home button to go back to the Main Menu.



BLACK – Adjust the BLACK LEVEL for the selected video processing channel. To adjust, turn the ROTARY ENCODER on the control panel. Press the DEFAULT soft button to go back to the default value.

- The range of adjustment is -30mV to +30mV.
- The default setting is 0mV.

Press the BACK button to move to the previous menu.
Press the Home button to go back to the Main Menu.

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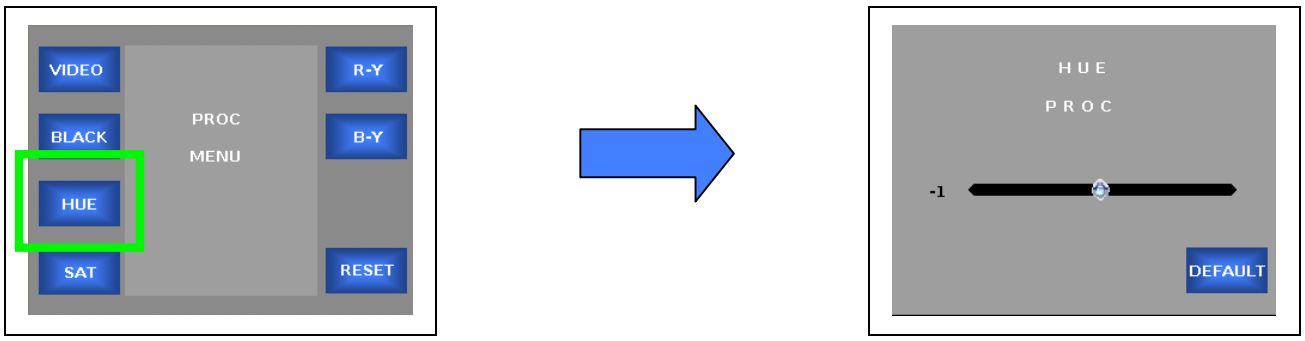
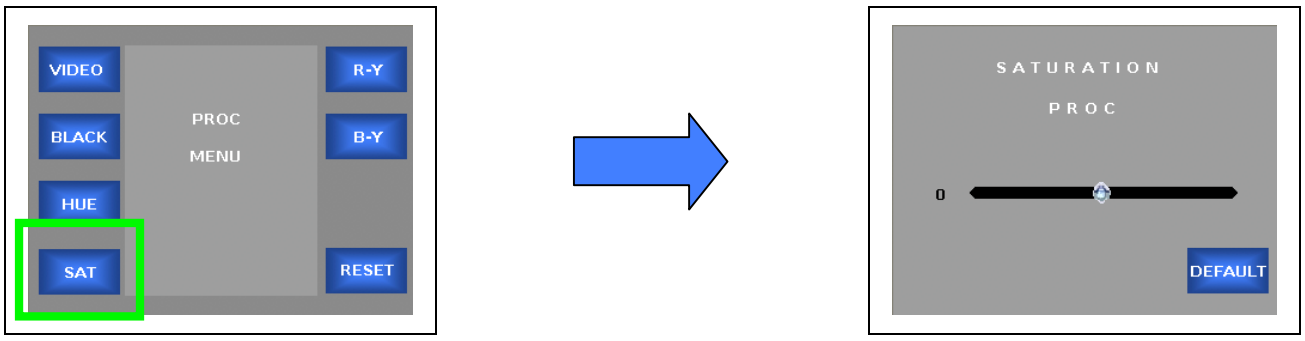
Proc Amp Menu (continued)



HUE – Adjust the HUE PHASE for the selected video processing channel. To adjust, turn the ROTARY ENCODER on the control panel. Press the DEFAULT soft button to go back to the default value.

- The range of adjustment is -179 degrees to +178 degrees.
- The default setting is 0 degrees.

Press the BACK button to move to the previous menu.
Press the Home button to go back to the Main Menu.



SAT – Adjust the SATURATION LEVEL for the selected video processing channel. To adjust, turn the ROTARY ENCODER on the control panel. Press the DEFAULT soft button to go back to the default value.

- The range of adjustment is -6.0dB to +6.0dB.
- The default setting is 0dB.

Press the BACK button to move to the previous menu.
Press the Home button to go back to the Main Menu.

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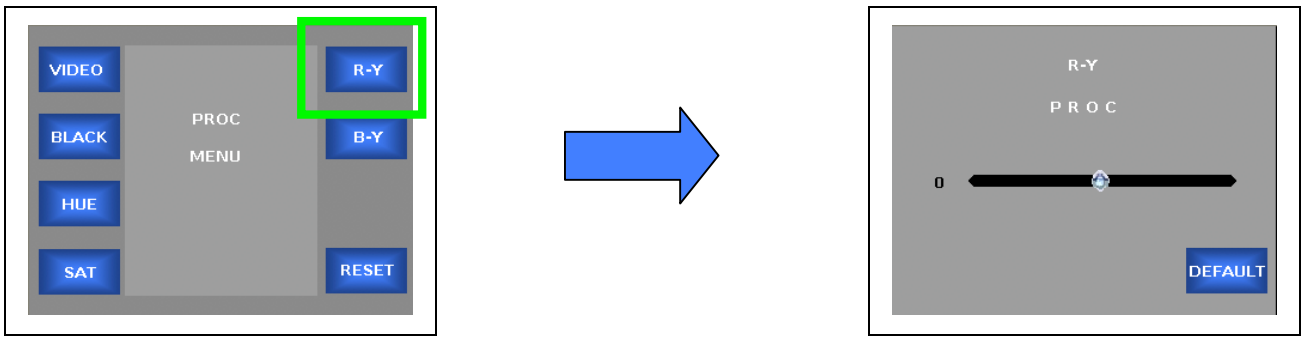
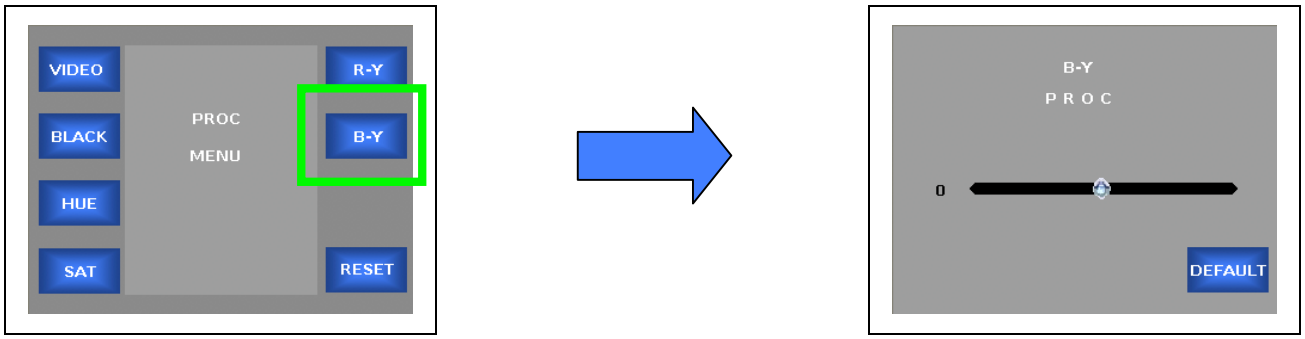
Proc Amp Menu (continued)



R-Y – Adjust the R-Y LEVEL for the selected video processing channel. To adjust, turn the ROTARY ENCODER on the control panel. Press the DEFAULT soft button to go back to the default value.

- The range of adjustment is -200mV to +200mV.
- The default setting is 0mV.

Press the BACK button to move to the previous menu.
Press the Home button to go back to the Main Menu.



B-Y – Adjust the B-Y LEVEL for the selected video processing channel. To adjust, turn the ROTARY ENCODER on the control panel. Press the DEFAULT soft button to go back to the default value.

- The range of adjustment is -200mV to +200mV.
- The default setting is 0mV.

Press the BACK button to move to the previous menu.
Press the Home button to go back to the Main Menu.

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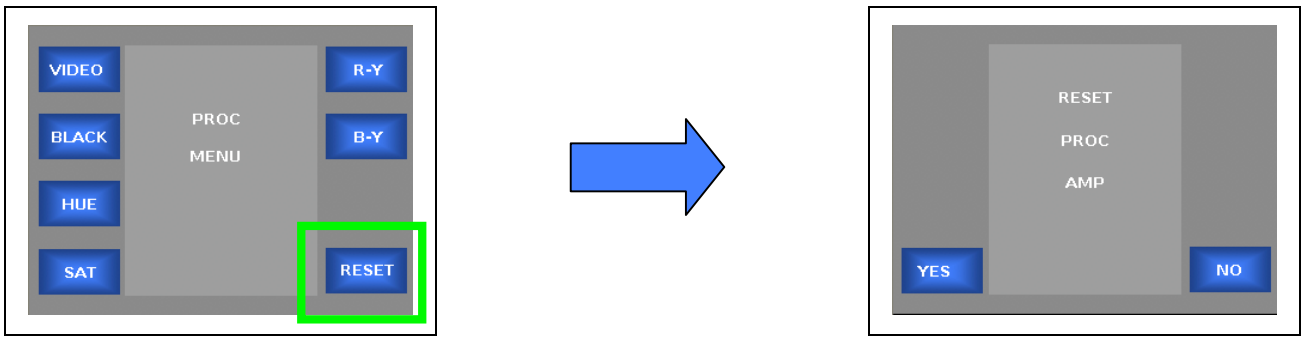
Proc Amp Menu (continued)



RESET – Resets all PROC AMP LEVELS to their default values

- **YES** – Will reset all proc amp levels (video gain, black level, hue, saturation, R-Y level, and B-Y level) back to their default values.
- **NO** – Leaves all proc amp settings at their current values.

Press the BACK button to move to the previous menu.
Press the Home button to go back to the Main Menu.

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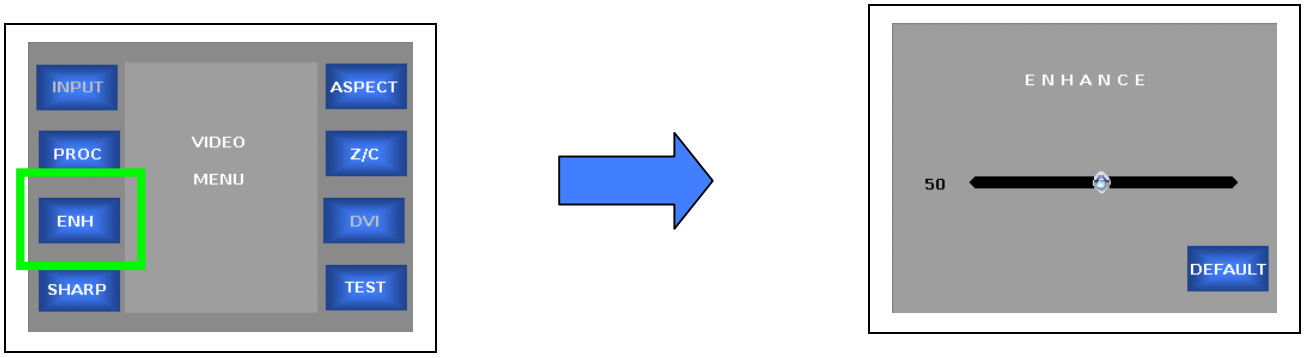
Enhance

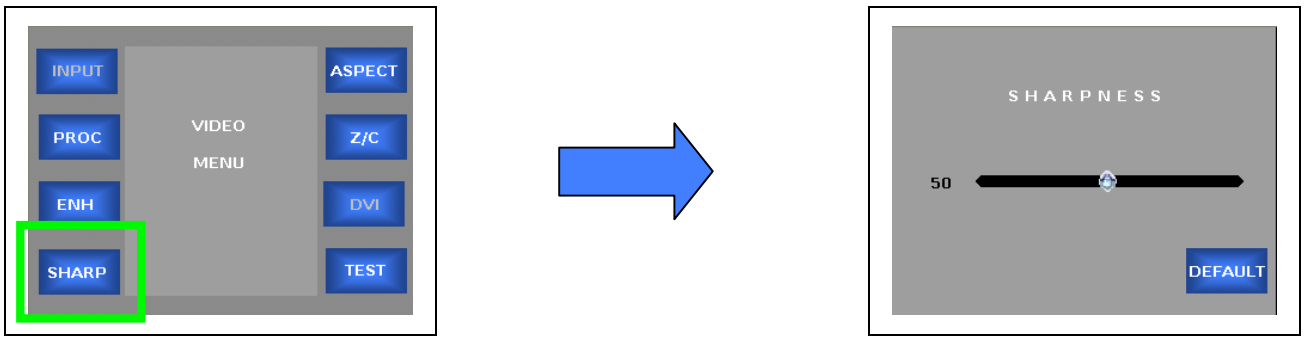


ENH – Adjust the DETAIL ENHANCE setting for the selected video processing channel. To adjust, turn the ROTARY ENCODER on the control panel. Press the DEFAULT soft button to go back to the default value.

- The range of adjustment is 0 to 100.
- The default setting is 25.

Press the BACK button to move to the previous menu.
Press the Home button to go back to the Main Menu.

Sharpness



SHARP – Adjust the SHARPNESS setting for the selected video processing channel. To adjust, turn the ROTARY ENCODER on the control panel. Press the DEFAULT soft button to go back to the default value.

- The range of adjustment is 0 to 100.
- The default setting is 0.

Press the BACK button to move to the previous menu.
Press the Home button to go back to the Main Menu.

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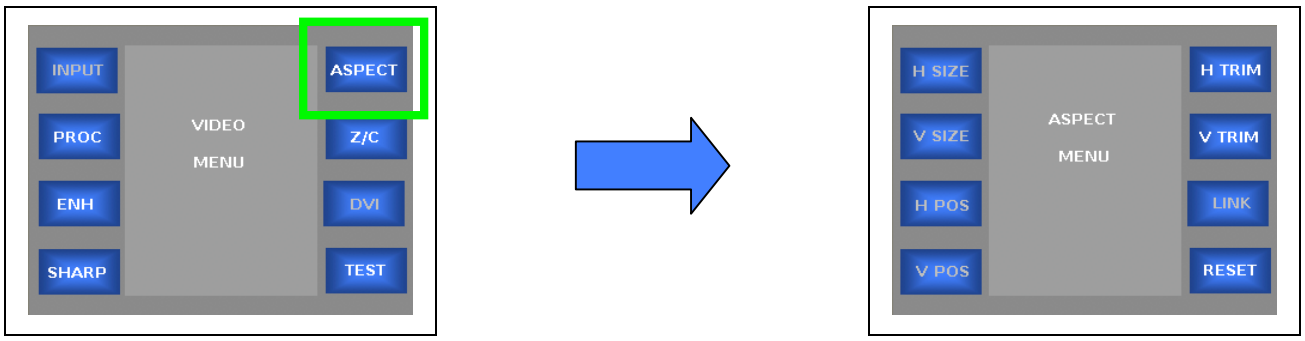
Aspect Ratio Menu



ASPECT – Takes the user to the Variable Aspect Ratio Conversion Menu

- **H SIZE** – Not functional / Future expansion
- **V SIZE** – Not functional / Future expansion
- **H POS** – Not functional / Future expansion
- **V POS** – Not functional / Future expansion
- **H TRIM** – Adjusts the HORIZONTAL TRIM for the image
- **V TRIM** – Adjust the VERTICAL TRIM for the image
- **LINK** – Not functional / Future expansion
- **RESET** – Resets all variable aspect ratio conversion setting

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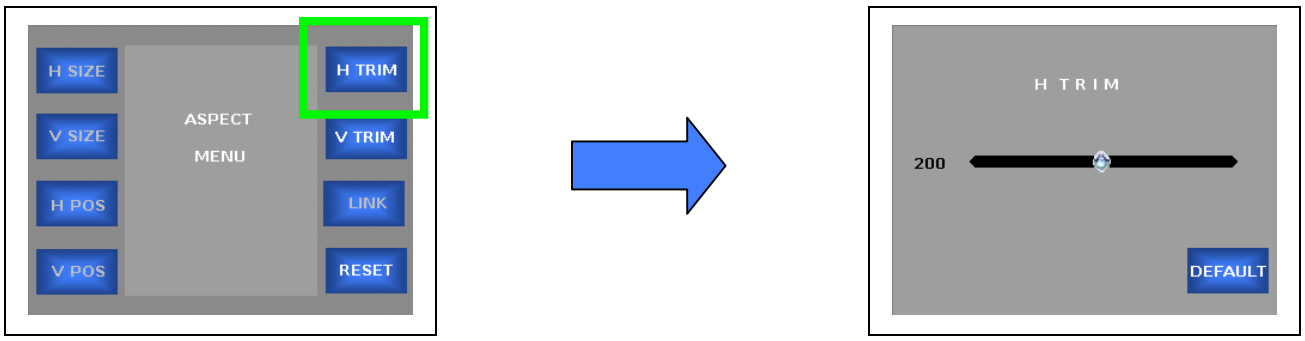
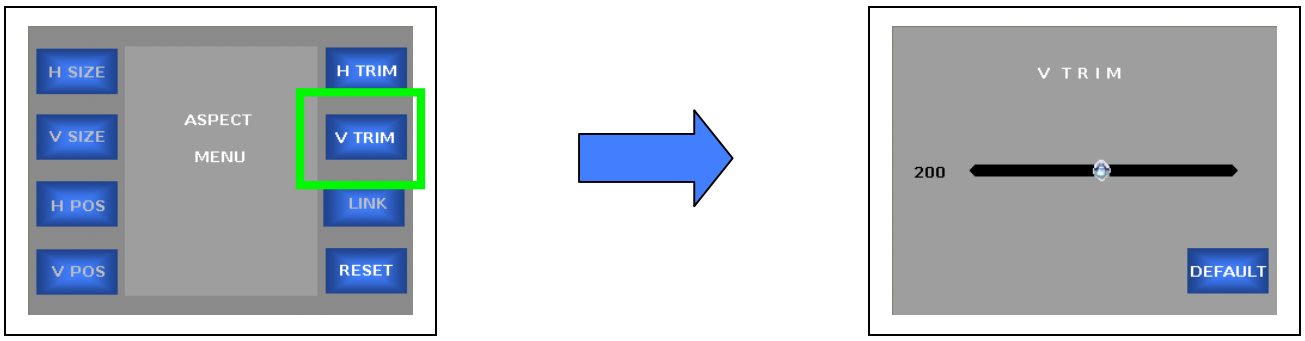
Aspect Ratio Menu (continued)



H TRIM – Adjust the HORIZONTAL TRIM of the image for the selected video processing channel. To adjust, turn the ROTARY ENCODER on the control panel. Press the DEFAULT soft button to go back to the default value.

- The range of adjustment is 0 to 200 pixels for standard definition formats and 0 to 400 pixels for high definition formats.
- The default setting is 0 pixels for both SD & HD.

Press the BACK button to move to the previous menu.
Press the Home button to go back to the Main Menu.



V TRIM – Adjust the VERTICAL TRIM of the image for the selected video processing channel. To adjust, turn the ROTARY ENCODER on the control panel. Press the DEFAULT soft button to go back to the default value.

- The range of adjustment is 0 to 200 lines for standard definition formats and 0 to 400 lines for high definition formats.
- The default setting is 0 lines for both SD & HD.

Press the BACK button to move to the previous menu.
Press the Home button to go back to the Main Menu.

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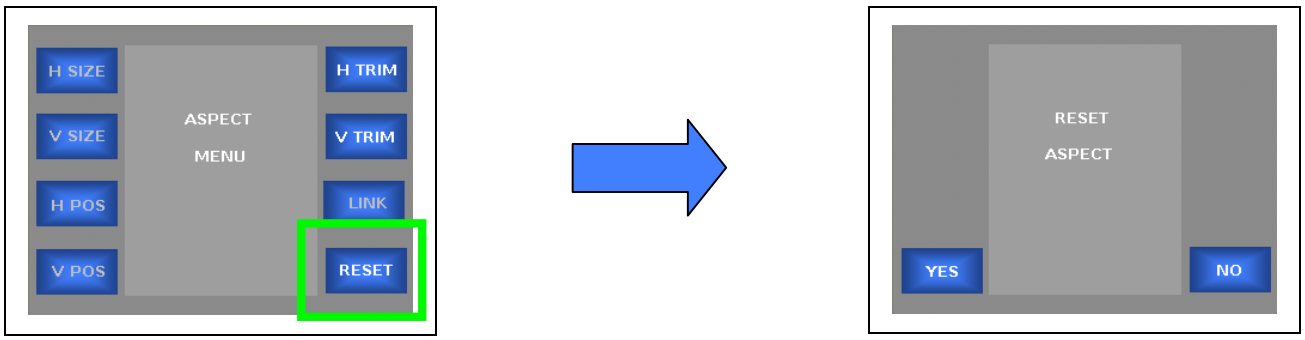
Aspect Ratio Menu (continued)



RESET – Resets all Variable Aspect Ratio settings to their default values

- **YES** – Will reset all variable aspect ratio conversion settings (H&V Size, H&V Position, and H&V Trim) back to their default values.
- **NO** – Leaves all variable aspect ratio conversion settings at their current values.

Press the BACK button to move to the previous menu.
Press the Home button to go back to the Main Menu.

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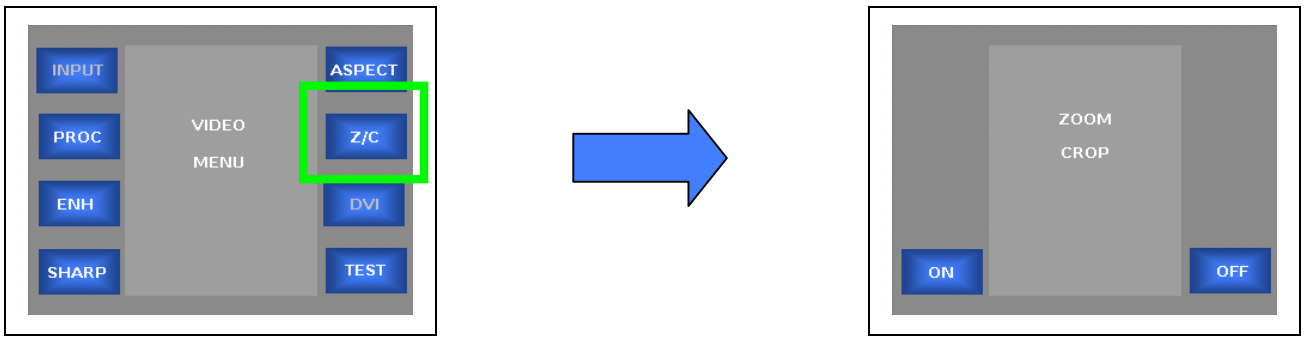
Zoom/Crop



Z/C – Enables ZOOM/CROP. This mode will zoom the image by 3-pixels/3-lines and then crop it by 3-pixels/3-lines. It is useful for eliminating edge effect caused by processing the edges of the image.

- **ON** – Will zoom the image by 3-pixels/3-lines and then crop it by 3-pixels/3-lines.
- **OFF** – Leaves the image in the original format.

Press the BACK button to move to the previous menu.
Press the Home button to go back to the Main Menu.

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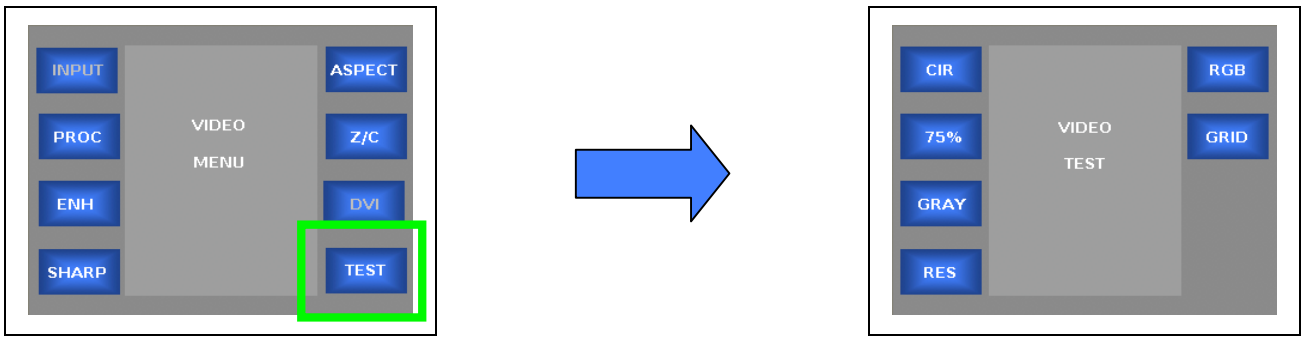
Test Generator Menu



Test – Takes the user to the Video Test Generator Menu

- **CIR** – Selects the Circle Test Pattern.
- **75%** – Selects the 75% Color Bars Test Pattern.
- **GRAY** – Selects the Gray Field Test Pattern.
- **RES** – Selects the Resolution (RES) Test Pattern.
- **RGB** – Selects the RGB Test Pattern.
- **GRID** – Selects the Grid Test Pattern.

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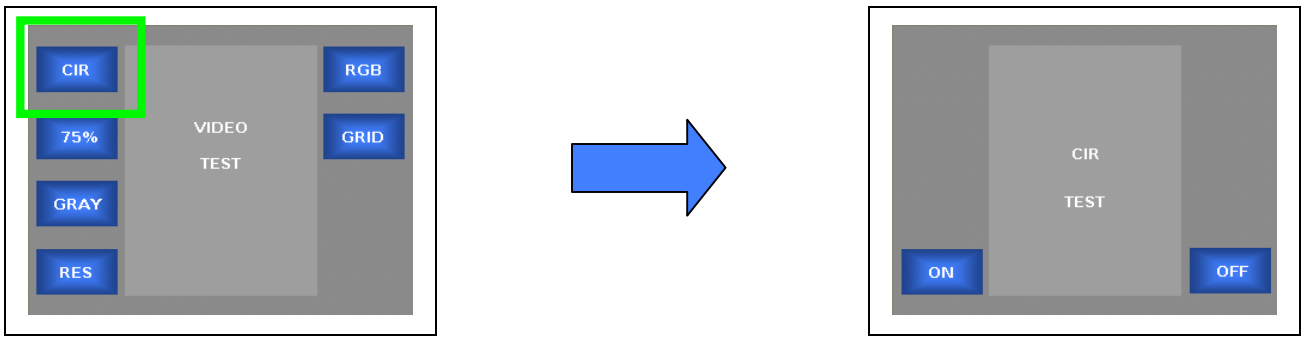
Test Generator Menu (continued)

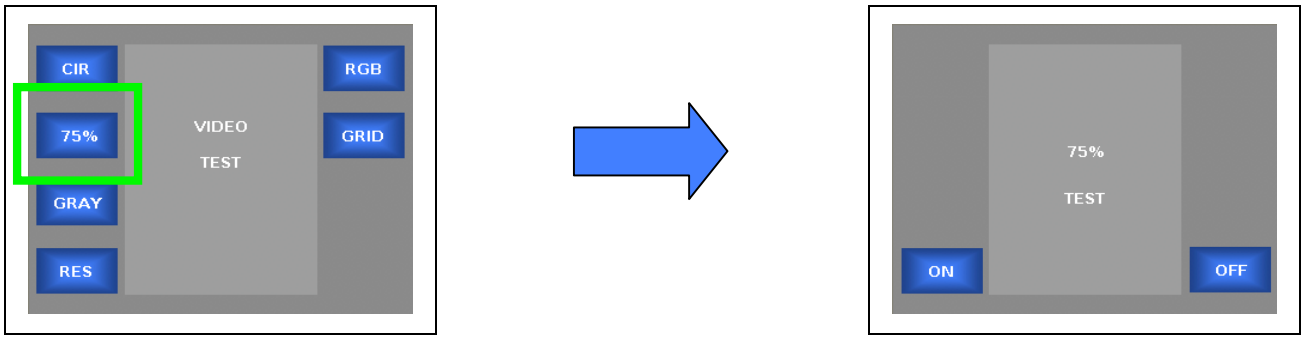


CIR – Selects the Circle Test Pattern.

- **ON** – Turns ON the Circle Test Pattern on the output of the selected video processing channel.
- **OFF** – Turns OFF the Circle Test Pattern on the output of the selected video processing channel.

Press the BACK button to move to the previous menu.
Press the Home button to go back to the Main Menu.

Note: If a test pattern has been turned on, and you go back to the Video Test Menu, the other test patterns will not be available (i.e, they will be grayed out). To select a new test pattern, you must first turn off the current test pattern and the select the new test pattern



75% – Selects the 75% Color Bars Test Pattern.

- **ON** – Turns ON the 75% Color Bars Test Pattern on the output of the selected video processing channel.
- **OFF** – Turns OFF the 75% Color Bars Test Pattern on the output of the selected video processing channel.

Press the BACK button to move to the previous menu.
Press the Home button to go back to the Main Menu.

Note: If a test pattern has been turned on, and you go back to the Video Test Menu, the other test patterns will not be available (i.e, they will be grayed out). To select a new test pattern, you must first turn off the current test pattern and the select the new test pattern

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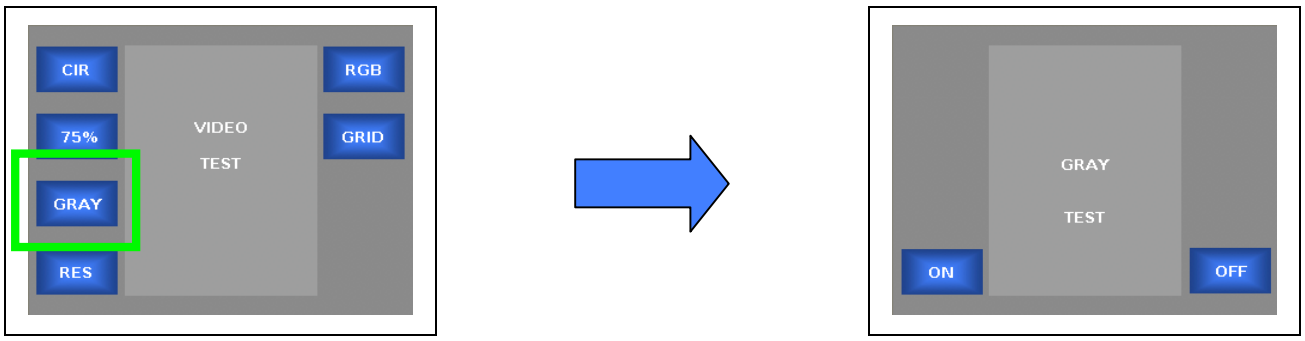
Test Generator Menu (continued)

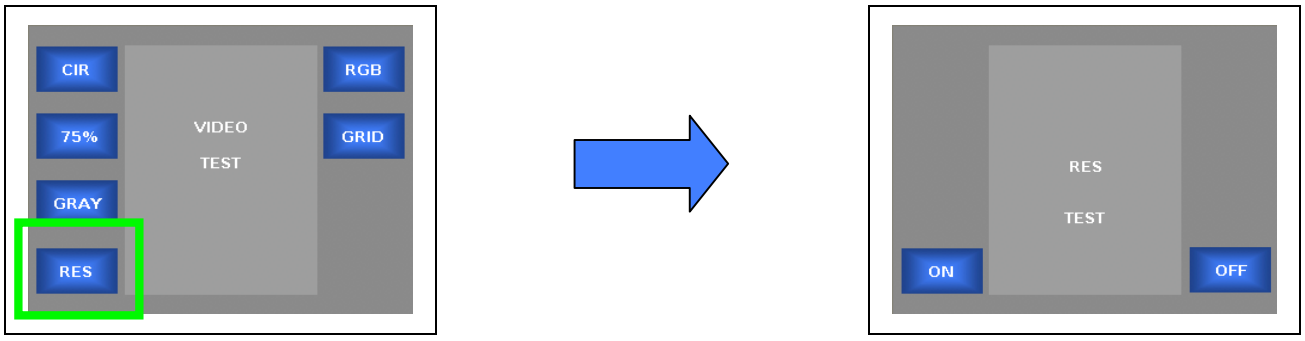


GRAY – Selects the Gray Field Test Pattern.

- **ON** – Turns ON the Gray Field Test Pattern on the output of the selected video processing channel.
- **OFF** – Turns OFF the Gray Field Test Pattern on the output of the selected video processing channel.

Press the BACK button to move to the previous menu.
Press the Home button to go back to the Main Menu.

Note: If a test pattern has been turned on, and you go back to the Video Test Menu, the other test patterns will not be available (i.e, they will be grayed out). To select a new test pattern, you must first turn off the current test pattern and the select the new test pattern



RES – Selects the Resolution (RES) Test Pattern.

- **ON** – Turns ON the Resolution (RES) Test Pattern on the output of the selected video processing channel.
- **OFF** – Turns OFF the Resolution (RES) Test Pattern on the output of the selected video processing channel.

Press the BACK button to move to the previous menu.
Press the Home button to go back to the Main Menu.

Note: If a test pattern has been turned on, and you go back to the Video Test Menu, the other test patterns will not be available (i.e, they will be grayed out). To select a new test pattern, you must first turn off the current test pattern and the select the new test pattern

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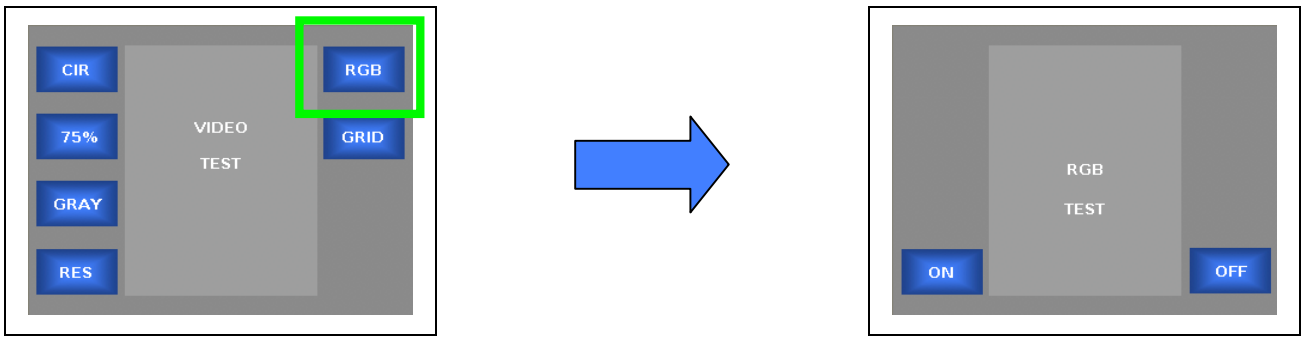
Test Generator Menu (continued)

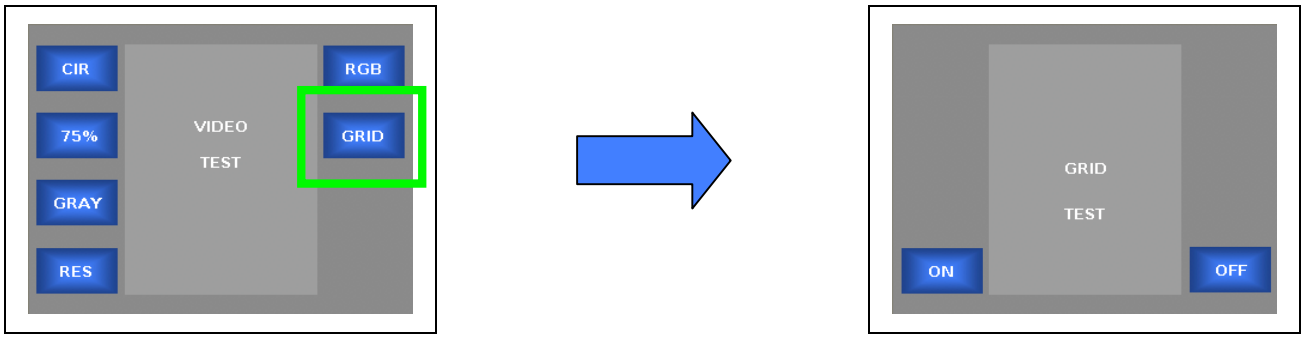


RGB – Selects the RGB Test Pattern.

- **ON** – Turns ON the RGB Test Pattern on the output of the selected video processing channel.
- **OFF** – Turns OFF the RGB Test Pattern on the output of the selected video processing channel.

Press the BACK button to move to the previous menu.
Press the Home button to go back to the Main Menu.

Note: If a test pattern has been turned on, and you go back to the Video Test Menu, the other test patterns will not be available (i.e, they will be grayed out). To select a new test pattern, you must first turn off the current test pattern and the select the new test pattern



GRID – Selects the Grid Test Pattern.

- **ON** – Turns ON the Grid Test Pattern on the output of the selected video processing channel.
- **OFF** – Turns OFF the Grid Test Pattern on the output of the selected video processing channel.

Press the BACK button to move to the previous menu.
Press the Home button to go back to the Main Menu.

Note: If a test pattern has been turned on, and you go back to the Video Test Menu, the other test patterns will not be available (i.e, they will be grayed out). To select a new test pattern, you must first turn off the current test pattern and the select the new test pattern

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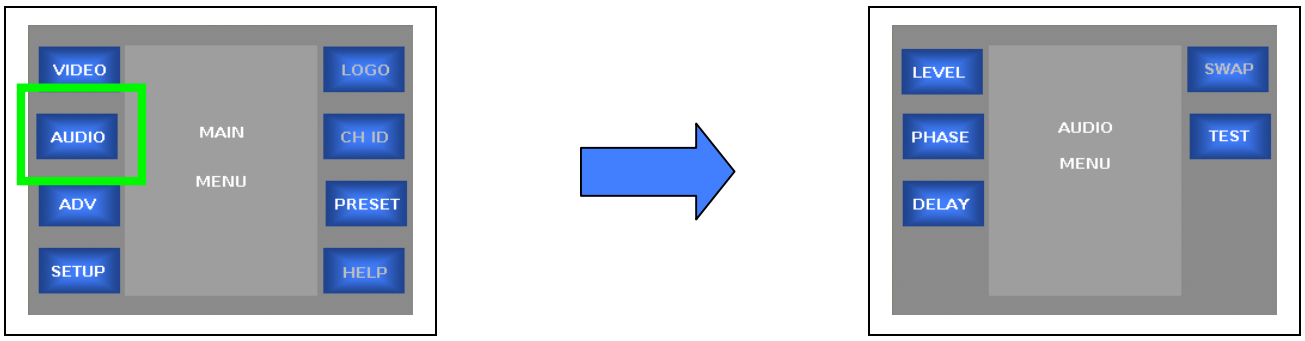
Audio Menu



AUDIO – Takes the user to the Audio menu

- **LEVEL** – Takes the user to the Audio Level adjustment menu
- **PHASE** – Takes the user to the Audio Phase adjustment menu
- **DELAY** – Takes the user to the Audio Delay adjustment menu
- SWAP – Not functional / Future expansion
- **TEST** – Takes the user to the Audio Test Tone menu

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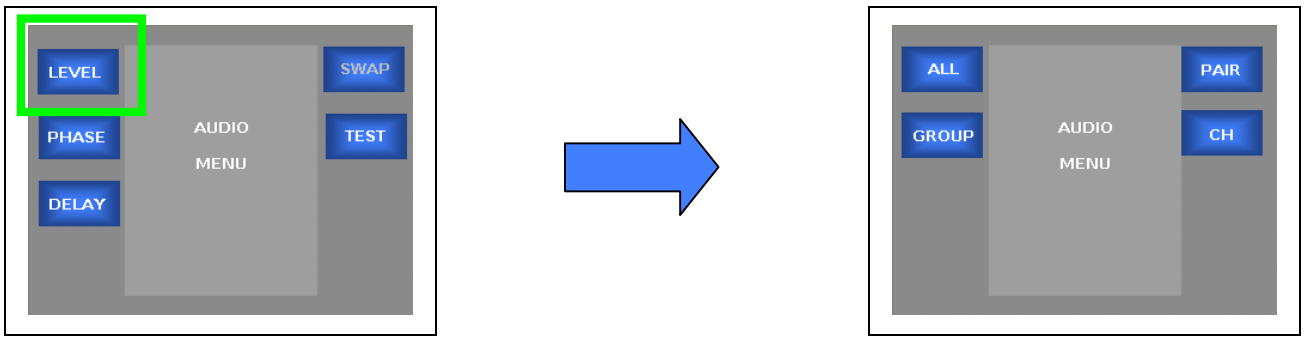
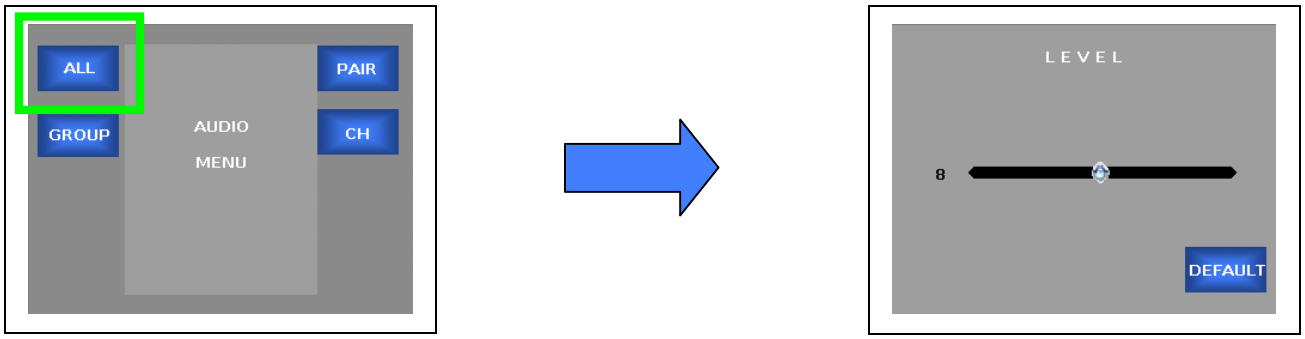
Audio Level Menu



LEVEL – Allows the user to adjust the AUDIO LEVEL for each audio channel in the currently selected video processing channel.

Audio Level Adjustment – All Channels



Audio Level (ALL) – Adjusts the AUDIO LEVEL on all audio channels in the currently selected video processing channel. To adjust, turn the ROTARY ENCODER on the control panel. Press the DEFAULT soft button to go back to the default value.

- The range of adjustment is -32dB to +16dB in 1dB steps.
- The default setting is 0dB.

Press the BACK button to move to the previous menu.
Press the Home button to go back to the Main Menu.

Note: At present there are 8 audio channels assigned to each video processing channel In a dual-channels VC100. A single channel VC100 has 16-channels of audio.

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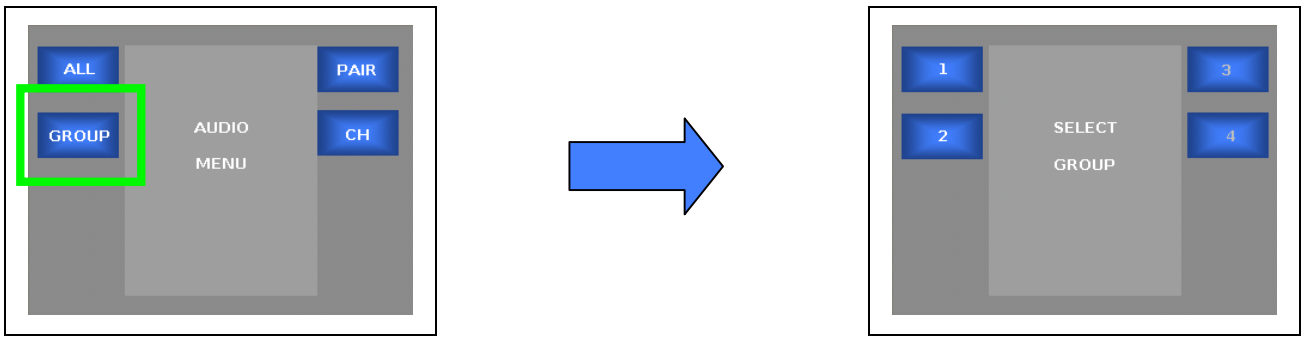
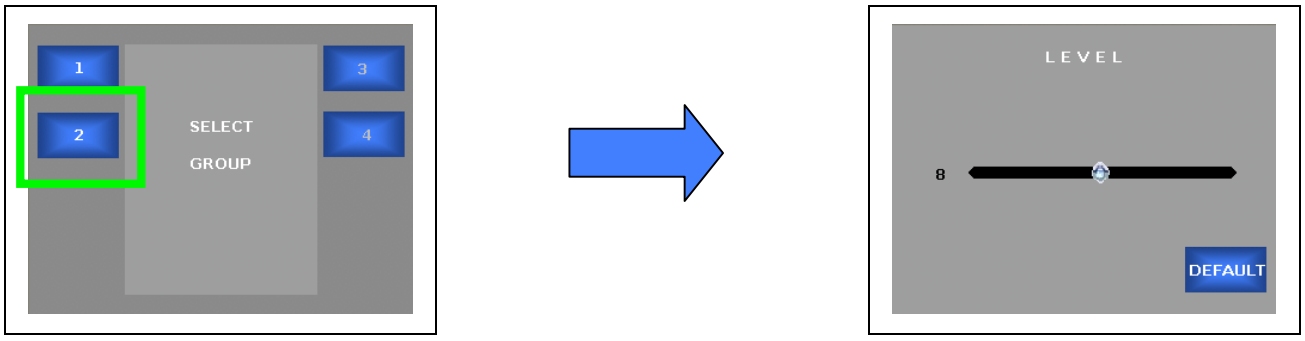
Audio Level Adjustment - by Audio Groups



- 1 - Adjusts the audio level for the channels in Group 1 (channels 1 - 4)
- 2 - Adjusts the audio level for the channels in Group 2 (channels 5 - 8)
- 3 - Adjusts the audio level for the channels in Group 3 (channels 9 - 12)
- 4 - Adjusts the audio level for the channels in Group 4 (channels 13 - 16)



Audio Level (Groups) - Adjusts the audio level of the channels in the selected audio group. To adjust, turn the rotary encoder on the control panel. Press the Default soft button to go back to the default value.

- The range of adjustment is -32dB to +16dB in 1dB steps.
- The default setting is 0dB.

Press the BACK button to move to the previous menu.
Press the Home button to go back to the Main Menu.

Note: At present there are 8 audio channels assigned to each video processing channel in a dual-channel VC100. A single channel VC100 has 16-channels of audio.

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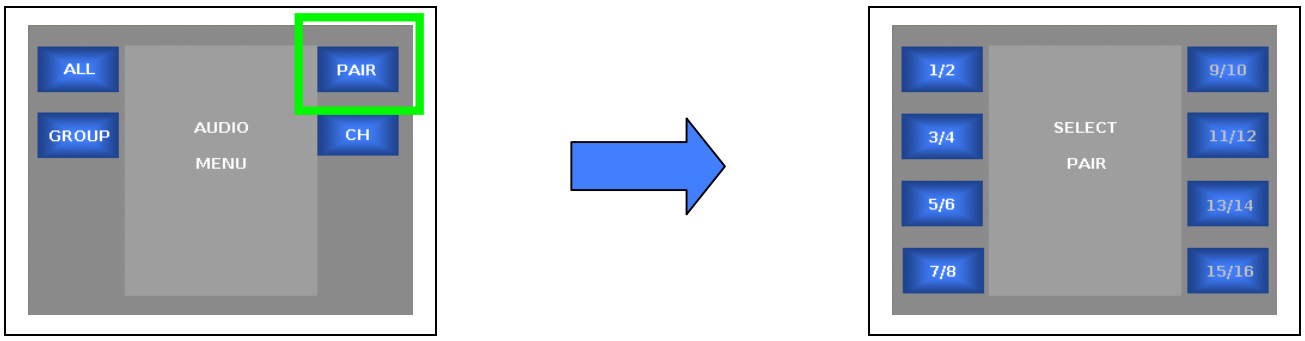
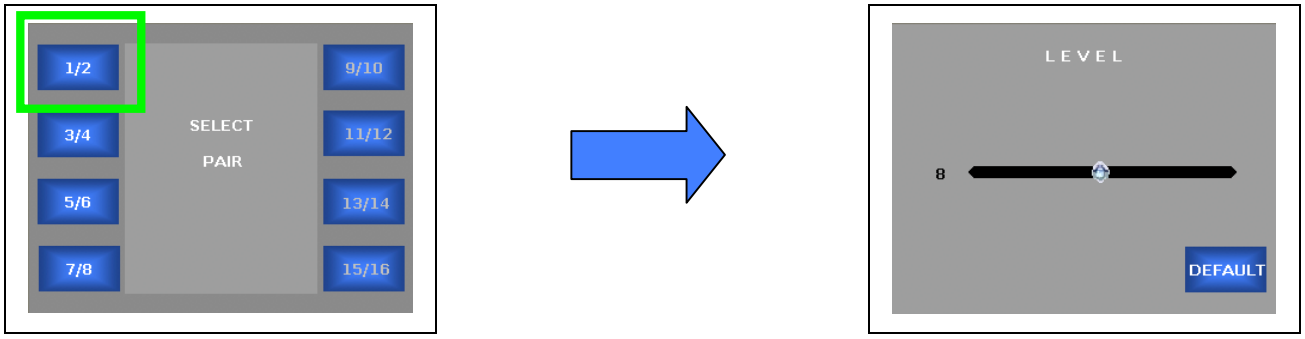
Audio Level Adjustment – by Audio Pairs



- 1/2 – Adjusts the audio level for the channels in Pair 1/2 (channels 1 & 2)
- 3/4 – Adjusts the audio level for the channels in Pair 3/4 (channels 3 & 4)
- 5/6 – Adjusts the audio level for the channels in Pair 5/6 (channels 5 & 6)
- 7/8 – Adjusts the audio level for the channels in Pair 7/8 (channels 7 & 8)
- 9/10 – Adjusts the audio level for the channels in Pair 9/10 (channels 9 & 10)
- 11/12 – Adjusts the audio level for the channels in Pair 11/12 (channels 11 & 12)
- 13/14 – Adjusts the audio level for the channels in Pair 13/14(channels 13 & 14)
- 15/16 – Adjusts the audio level for the channels in Pair 15/16 (channels 15 & 16)



Audio Level (Pairs) – Adjusts the audio level of the channels in the selected audio pair. To adjust, turn the rotary encoder on the control panel. Press the Default soft button to go back to the default value.

- The range of adjustment is -32dB to +16dB in 1dB steps.
- The default setting is 0dB.

Press the BACK button to move to the previous menu.
Press the Home button to go back to the Main Menu.

Note: At present there are 8 audio channels assigned to each video processing channel in a dual-channel VC100. A single channel VC100 has 16-channels of audio.

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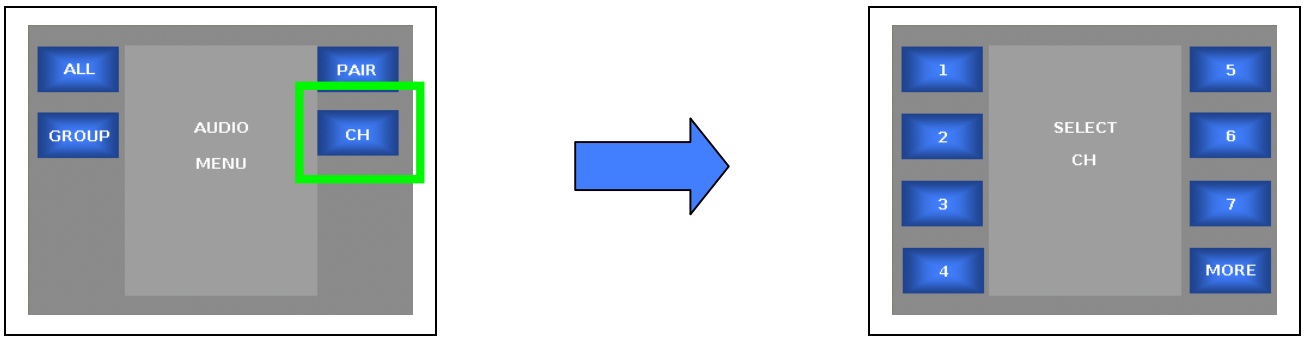
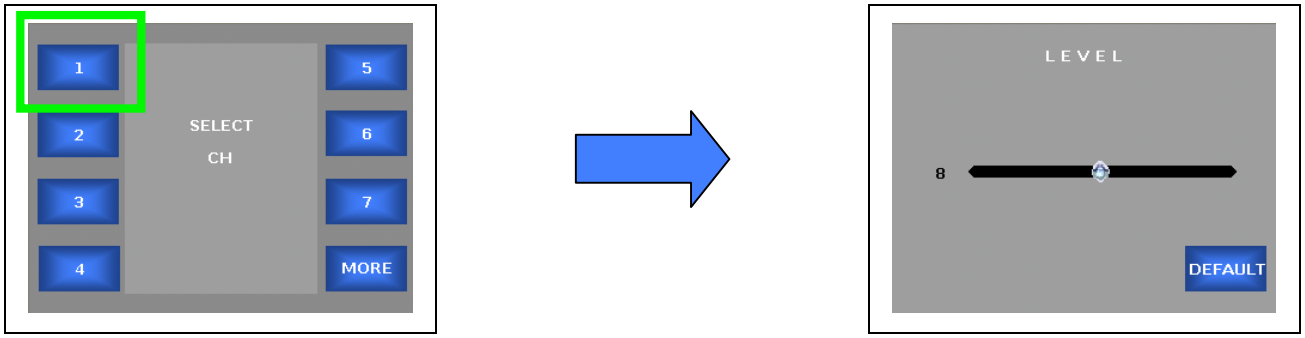
Audio Level Adjustment – by Audio Channels



- 1 – Adjusts the audio level for channel 1
- 2 – Adjusts the audio level for channel 2
- 3 – Adjusts the audio level for channel 3
- 4 – Adjusts the audio level for channel 4
- 5 – Adjusts the audio level for channel 5
- 6 – Adjusts the audio level for channel 6
- 7 – Adjusts the audio level for channel 7
- MORE – Takes the user to the next channel selection menu



Audio Level (Channels 1-7) – Adjusts the audio level of the individual channels. To adjust, turn the rotary encoder on the control panel. Press the Default soft button to go back to the default value.

- The range of adjustment is -32dB to +16dB in 1dB steps.
- The default setting is 0dB.

Press the BACK button to move to the previous menu.
Press the Home button to go back to the Main Menu.

Note: At present there are 8 audio channels assigned to each video processing channel in a dual-channel VC100. A single channel VC100 has 16-channels of audio.

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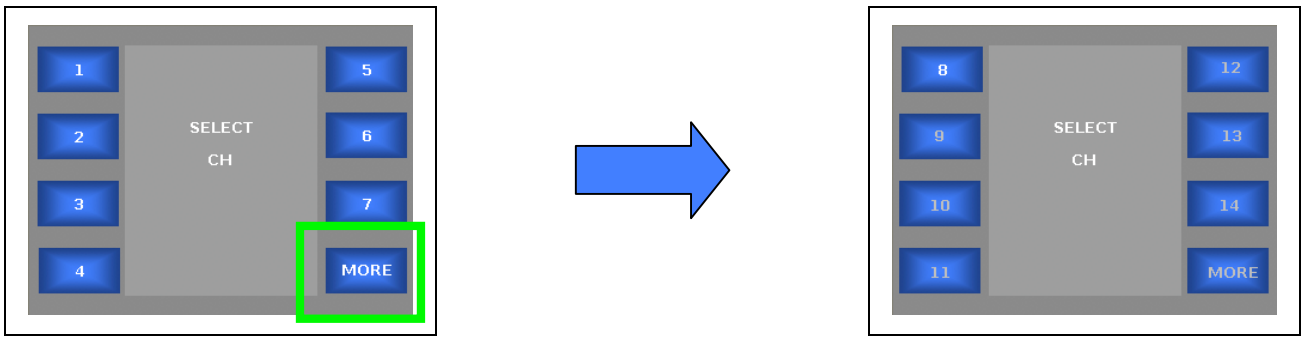
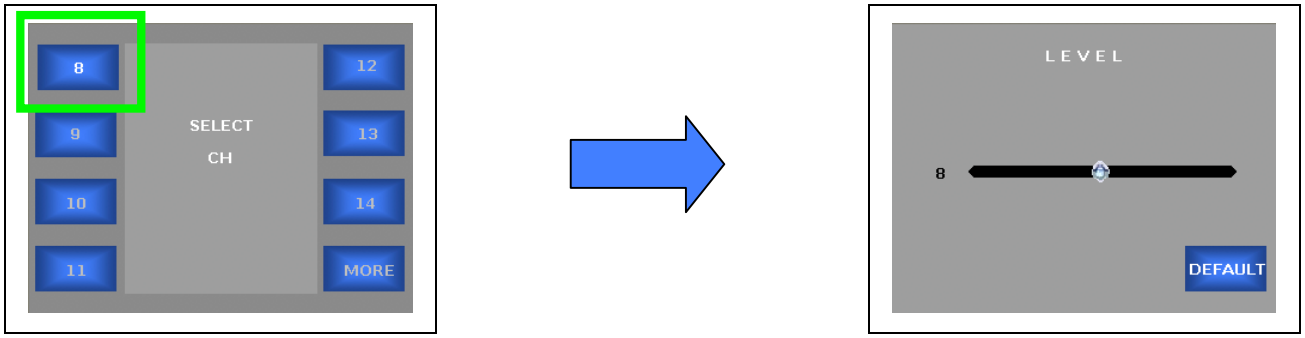
Audio Level Adjustment – by Audio Channels (continued)



- 8 – Adjusts the audio level for channel 8
- 9 – Adjusts the audio level for channel 9
- 10 – Adjusts the audio level for channel 10
- 11 – Adjusts the audio level for channel 11
- 12 – Adjusts the audio level for channel 12
- 13 – Adjusts the audio level for channel 13
- 14 – Adjusts the audio level for channel 14
- MORE – Takes the user to the next channel selection menu



Audio Level (Channels 8-14) – Adjusts the audio level of the individual channels. To adjust, turn the rotary encoder on the control panel. Press the Default soft button to go back to the default value.

- The range of adjustment is -32dB to +16dB in 1dB steps.
- The default setting is 0dB.

Press the BACK button to move to the previous menu.
Press the Home button to go back to the Main Menu.

Note: At present there are 8 audio channels assigned to each video processing channel in a dual-channel VC100. A single channel VC100 has 16-channels of audio.

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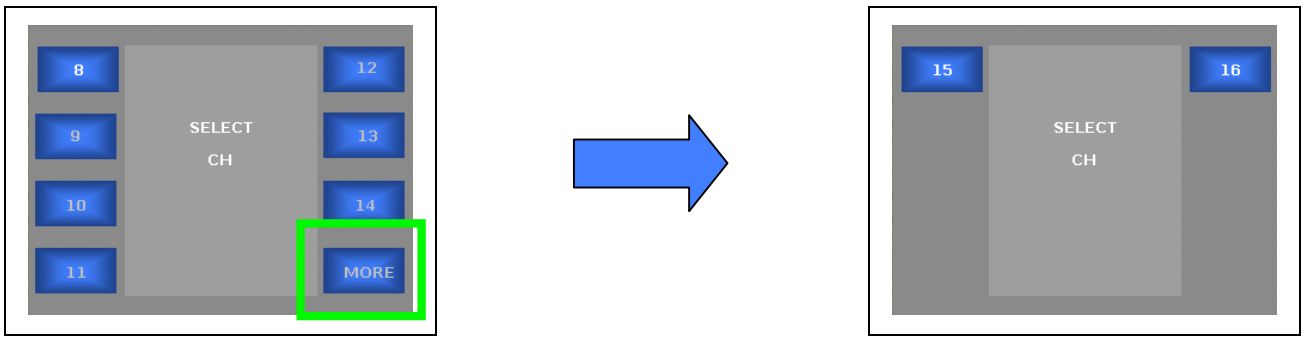
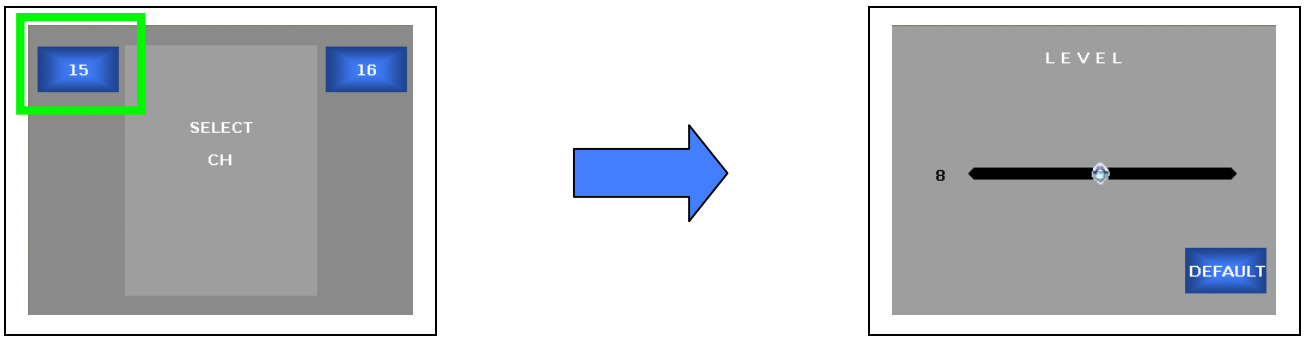
Audio Level Adjustment – by Audio Channels (continued)



- 15 – Adjusts the audio level for channel 15
- 16 – Adjusts the audio level for channel 16



Audio Level (Channels 15-16) – Adjusts the audio level of the individual channels. To adjust, turn the rotary encoder on the control panel. Press the Default soft button to go back to the default value.

- The range of adjustment is -32dB to +16dB in 1dB steps.
- The default setting is 0dB.

Press the BACK button to move to the previous menu.
Press the Home button to go back to the Main Menu.

Note: At present there are 8 audio channels assigned to each video processing channel in a dual-channel VC100. A single channel VC100 has 16-channels of audio.

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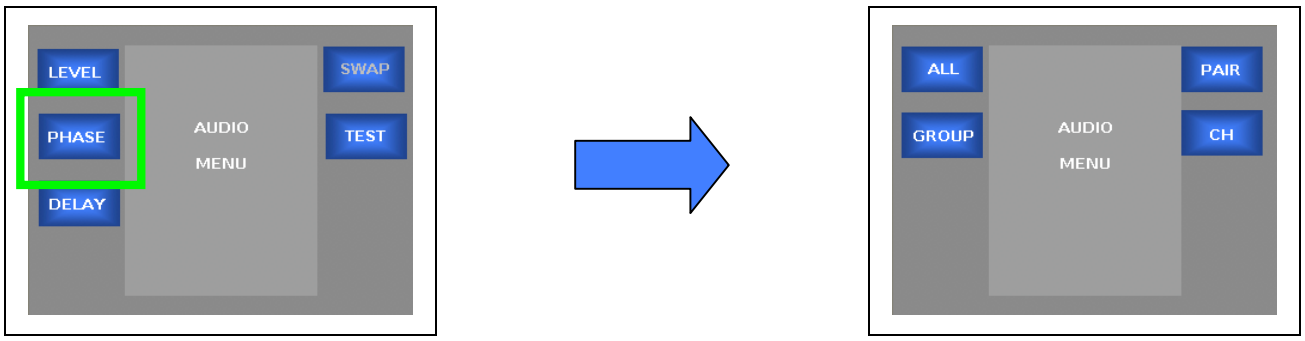
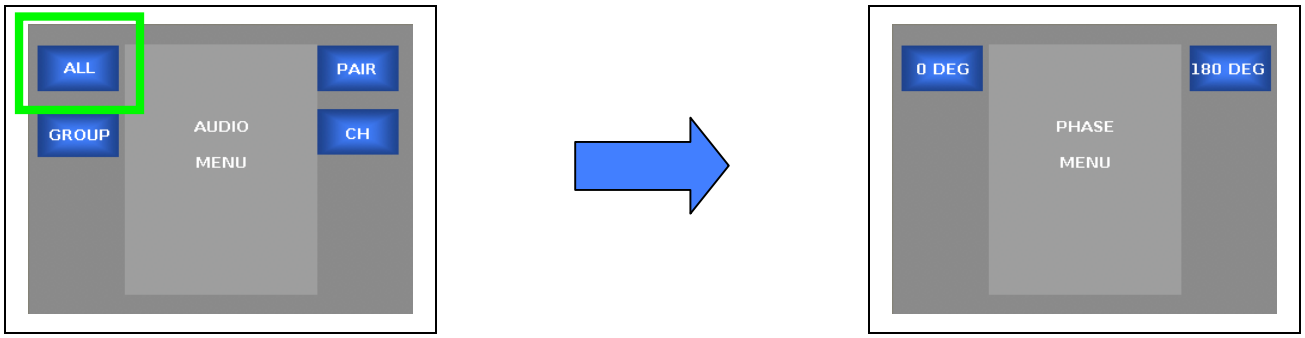
Audio Phase Menu



PHASE – Allows the user to adjust the audio phase for each audio channel in the currently selected video processing channel.

Audio Phase Adjustment – All Channels



ALL – Adjusts the audio phase on all audio channels in the currently selected video processing channel.

- 0 DEG – Sets the audio phase to 0 degrees of all audio channels in the currently selected video processing channel.
- 180 DEG – Sets the audio phase to 180 degrees of all audio channels in the currently selected video processing channel.

Press the BACK button to move to the previous menu.
Press the Home button to go back to the Main Menu.

Note: At present there are 8 audio channels assigned to each video processing channel in a dual-channel VC100. A single channel VC100 has 16-channels of audio.

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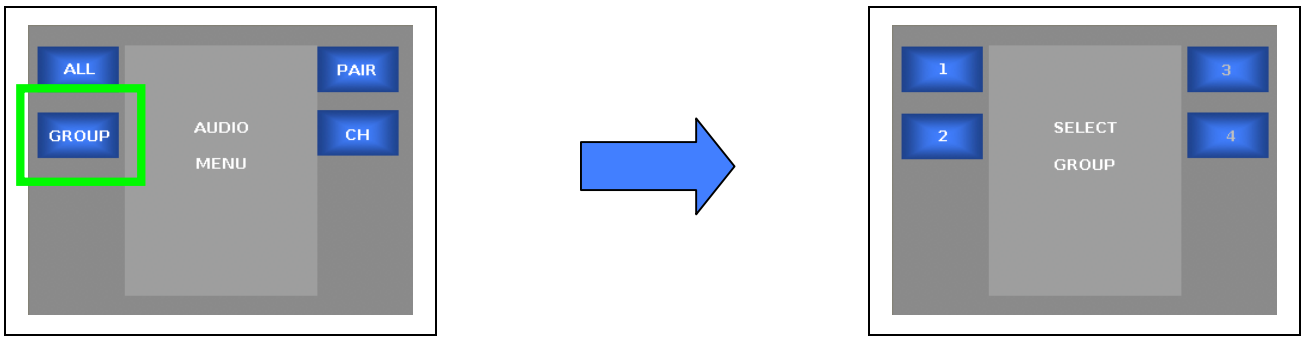
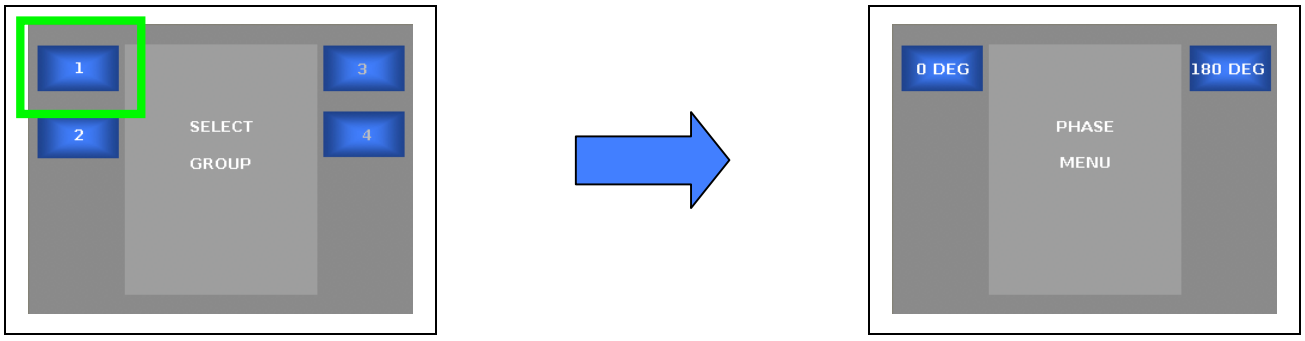
Audio Phase Adjustment – by Audio Groups



- 1 – Adjusts the audio phase for the channels in Group 1 (channels 1 – 4)
- 2 – Adjusts the audio phase for the channels in Group 2 (channels 5 – 8)
- 3 – Adjusts the audio phase for the channels in Group 3 (channels 9 – 12)
- 4 – Adjusts the audio phase for the channels in Group 4 (channels 13 – 16)



Audio Phase (Groups) – Adjusts the audio phase of the channels in the selected audio group.

- 0 DEG – Sets the audio phase to 0 degrees of all audio channels in the selected group in the currently selected video processing channel.
- 180 DEG – Sets the audio phase to 180 degrees of all audio channels in the selected group in the currently selected video processing channel.

Press the BACK button to move to the previous menu.
Press the Home button to go back to the Main Menu.

Note: At present there are 8 audio channels assigned to each video processing channel in a dual-channel VC100. A single channel VC100 has 16-channels of audio.

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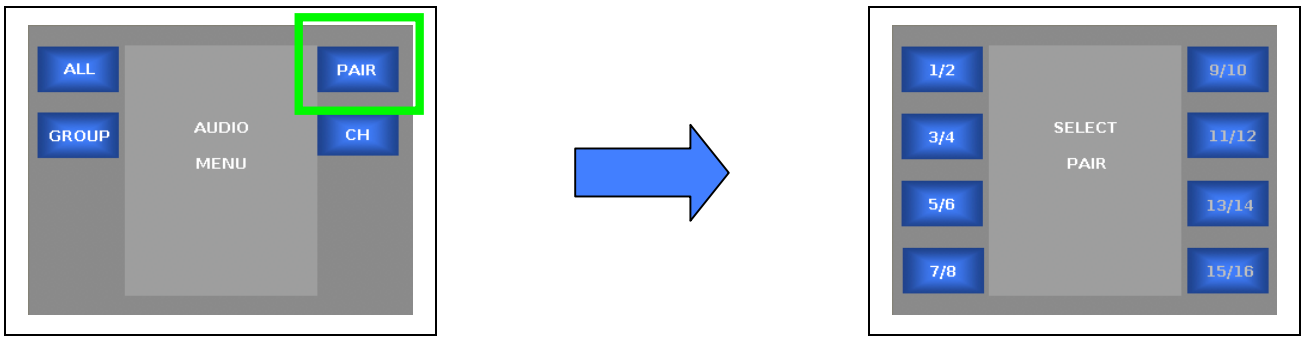
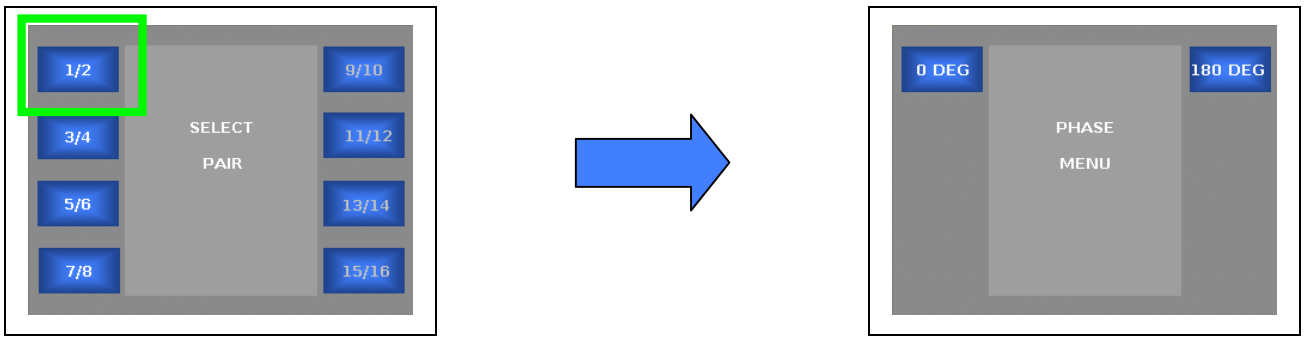
Audio Phase Adjustment – by Audio Pairs



- 1/2 – Adjusts the audio phase for the channels in Pair 1/2 (channels 1 & 2)
- 3/4 – Adjusts the audio phase for the channels in Pair 3/4 (channels 3 & 4)
- 5/6 – Adjusts the audio phase for the channels in Pair 5/6 (channels 5 & 6)
- 7/8 – Adjusts the audio phase for the channels in Pair 7/8 (channels 7 & 8)
- 9/10 – Adjusts the audio phase for the channels in Pair 9/10 (channels 9 & 10)
- 11/12 – Adjusts the audio phase for the channels in Pair 11/12 (channels 11 & 12)
- 13/14 – Adjusts the audio phase for the channels in Pair 13/14(channels 13 & 14)
- 15/16 – Adjusts the audio phase for the channels in Pair 15/16 (channels 15 & 16)



Audio Phase (Pairs) – Adjusts the audio phase of the channels in the selected audio pair.

- 0 DEG – Sets the audio phase to 0 degrees of both audio channels in the selected audio pair in the currently selected video processing channel.
- 180 DEG – Sets the audio phase to 180 degrees of both audio channels in the selected audio pair in the currently selected video processing channel.

Press the BACK button to move to the previous menu.
Press the Home button to go back to the Main Menu.

Note: At present there are 8 audio channels assigned to each video processing channel in a dual-channel VC100. A single channel VC100 has 16-channels of audio.

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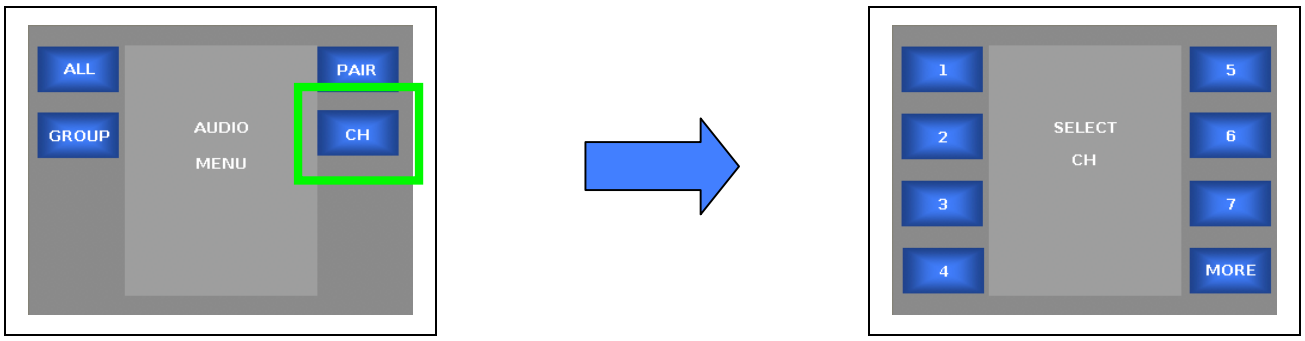
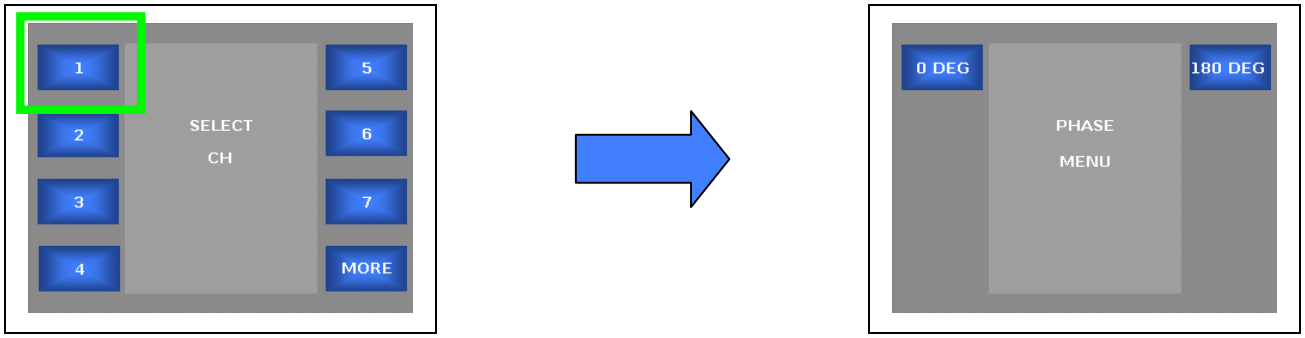
Audio Phase Adjustment – by Audio Channels



- 1 – Adjusts the audio phase for channel 1
- 2 – Adjusts the audio phase for channel 2
- 3 – Adjusts the audio phase for channel 3
- 4 – Adjusts the audio phase for channel 4
- 5 – Adjusts the audio phase for channel 5
- 6 – Adjusts the audio phase for channel 6
- 7 – Adjusts the audio phase for channel 7
- MORE – Takes the user to the next channel selection menu



Audio Phase (Channels 1-7) – Adjusts the audio phase of the individual channels.

- 0 DEG – Sets the audio phase to 0 degrees of the selected audio channel in the currently selected video processing channel.
- 180 DEG – Sets the audio phase to 180 degrees of the selected audio channel in the currently selected video processing channel.

Press the BACK button to move to the previous menu.
Press the Home button to go back to the Main Menu.

Note: At present there are 8 audio channels assigned to each video processing channel in a dual-channel VC100. A single channel VC100 has 16-channels of audio.

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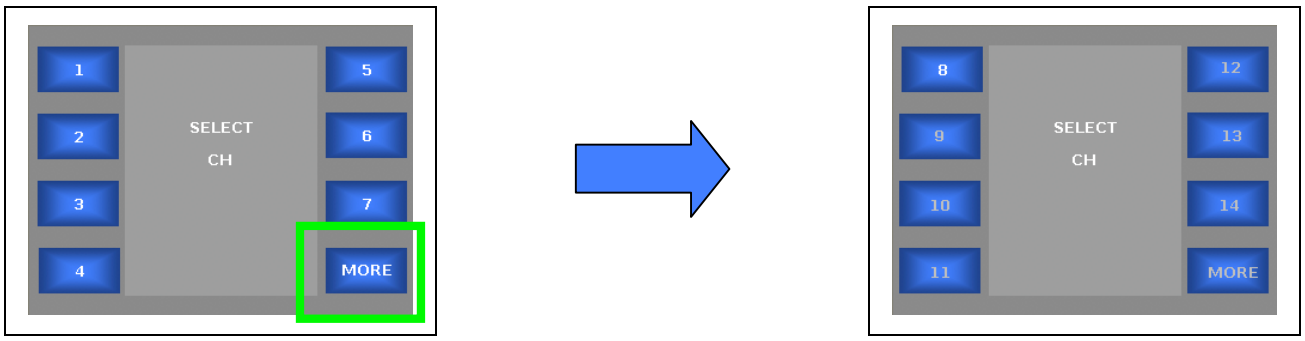
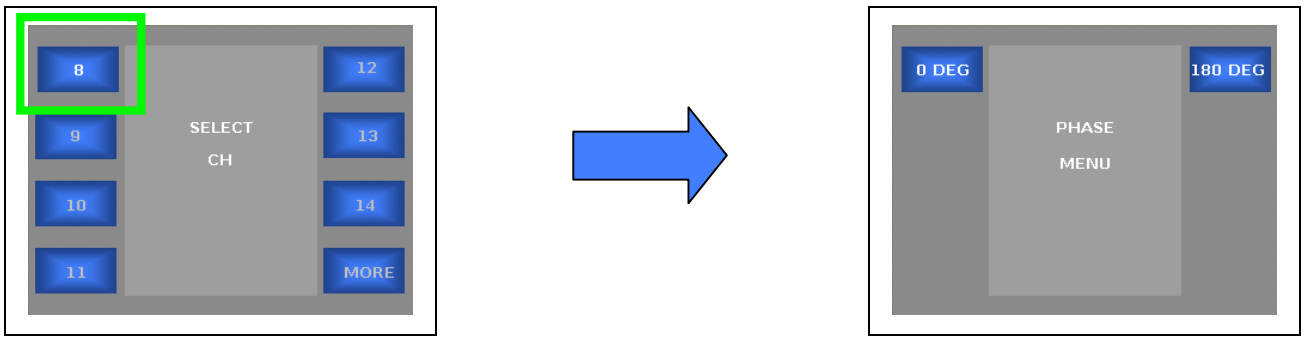
Audio Phase Adjustment – by Audio Channels (continued)



- 8 – Adjusts the audio phase for channel 8
- 9 – Adjusts the audio phase for channel 9
- 10 – Adjusts the audio phase for channel 10
- 11 – Adjusts the audio phase for channel 11
- 12 – Adjusts the audio phase for channel 12
- 13 – Adjusts the audio phase for channel 13
- 14 – Adjusts the audio phase for channel 14
- MORE – Takes the user to the next channel selection menu



Audio Phase (Channels 8-14) – Adjusts the audio phase of the individual channels.

- 0 DEG – Sets the audio phase to 0 degrees of theselected audio channel in the currently selected video processing channel.
- 180 DEG – Sets the audio phase to 180 degrees of the selected audio channel in the currently selected video processing channel.

Press the BACK button to move to the previous menu.
Press the Home button to go back to the Main Menu.

Note: At present there are 8 audio channels assigned to each video processing channel In a dual-channels VC100. A single channel VC100 has 16-channels of audio.

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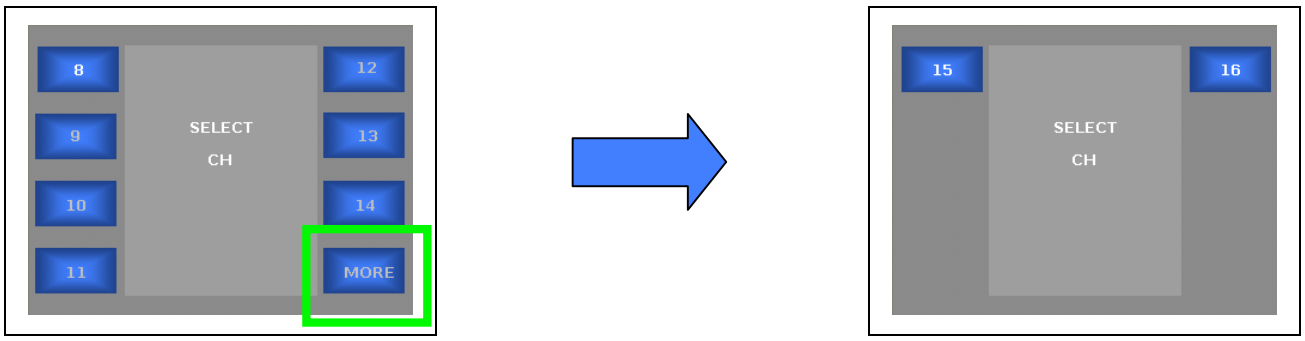
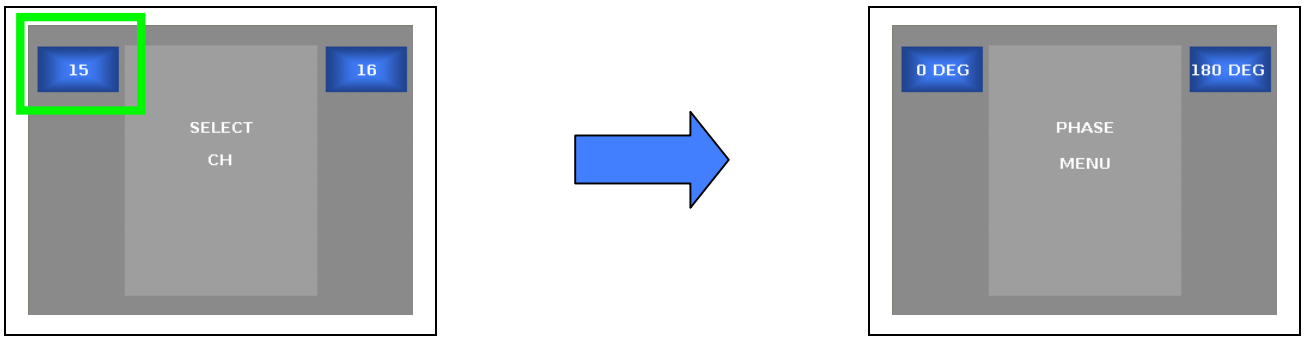
Audio Phase Adjustment – by Audio Channels (continued)



- 15 – Adjusts the audio phase for channel 15
- 16 – Adjusts the audio phase for channel 16



Audio Phase (Channels (15-16)) – Adjusts the audio phase of the individual channels.

- 0 DEG – Sets the audio phase to 0 degrees of the selected audio channel in the currently selected video processing channel.
- 180 DEG – Sets the audio phase to 180 degrees of the selected audio channel in the currently selected video processing channel.

Press the BACK button to move to the previous menu.
Press the Home button to go back to the Main Menu.

Note: At present there are 8 audio channels assigned to each video processing channel in a dual-channel VC100. A single channel VC100 has 16-channels of audio.

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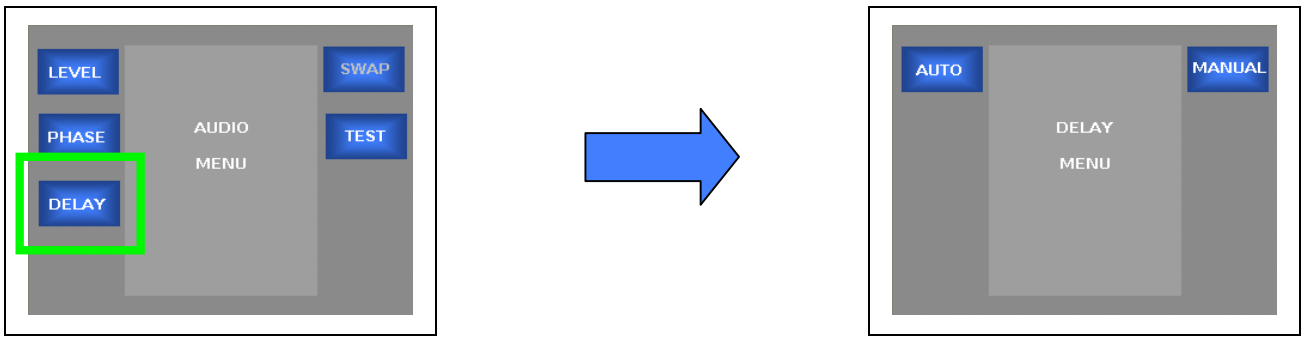
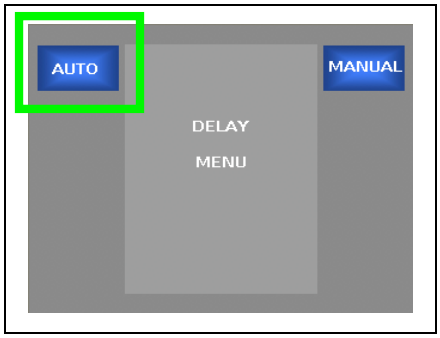
Audio Delay Menu



DELAY – Takes the user to audio delay menu.

- **AUTO** – Selects the Auto delay mode.
- **MANUAL** – Selects the Manual delay mode.



AUTO – Not functional / Future expansion

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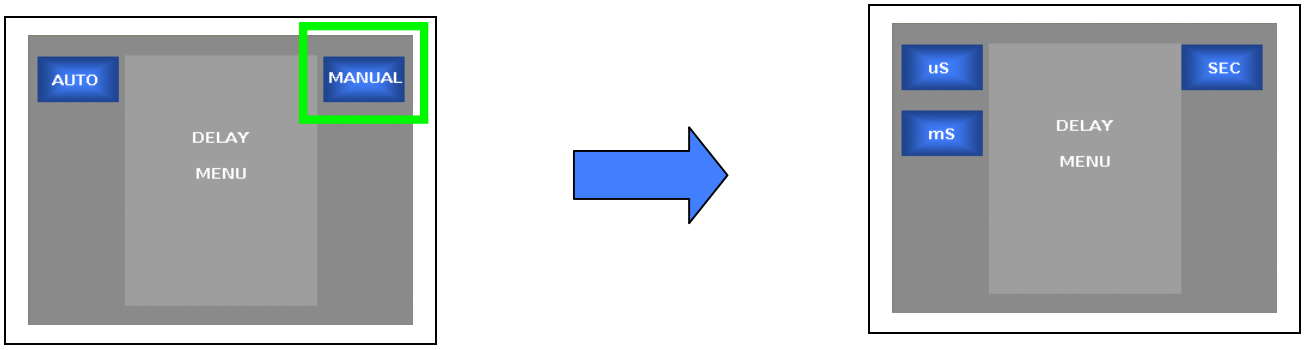
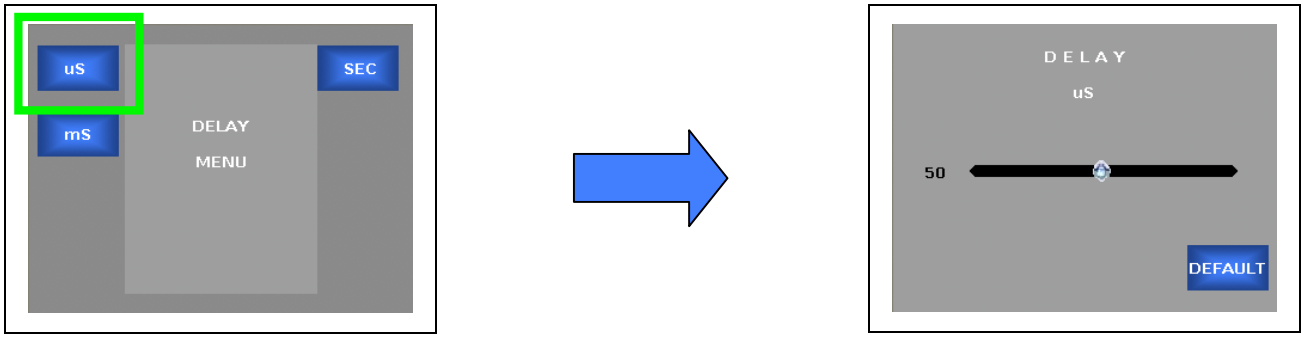
Audio Delay Menu (continued)



MANUAL – Allows the audio to be manually adjusted.

- Audio Delay (uS) – Takes the user to the microsecond adjustment slider
- Audio Delay (mS) – Takes the user to the millisecond adjustment slider
- Audio Delay (Sec) – Takes the user to the seconds adjustment slider



Audio Delay (uS) – Adjusts the audio delay in the currently selected video processing channel in microsecond increments. To adjust, turn the rotary encoder on the control panel. Press the Default soft button to go back to the default value.

- The range of adjustment is 0 to 49uS
- The default setting is 3uS

Press the BACK button to move to the previous menu.
Press the Home button to go back to the Main Menu.

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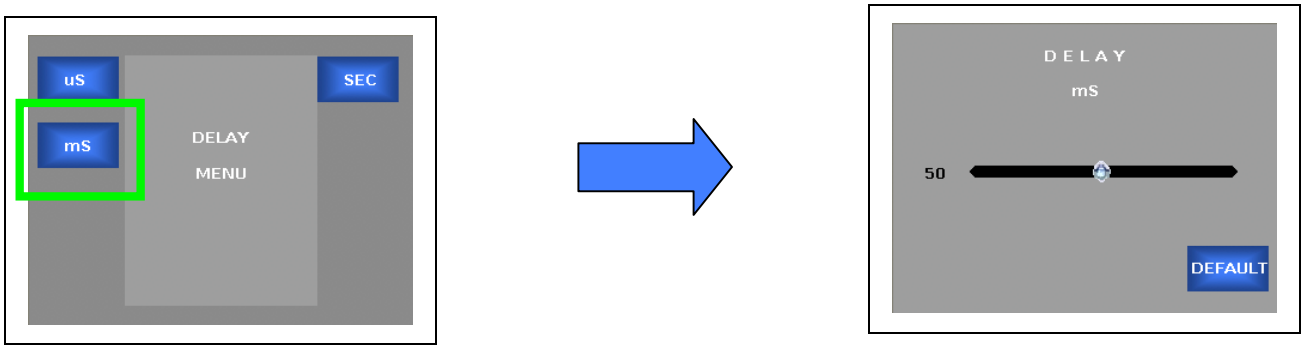
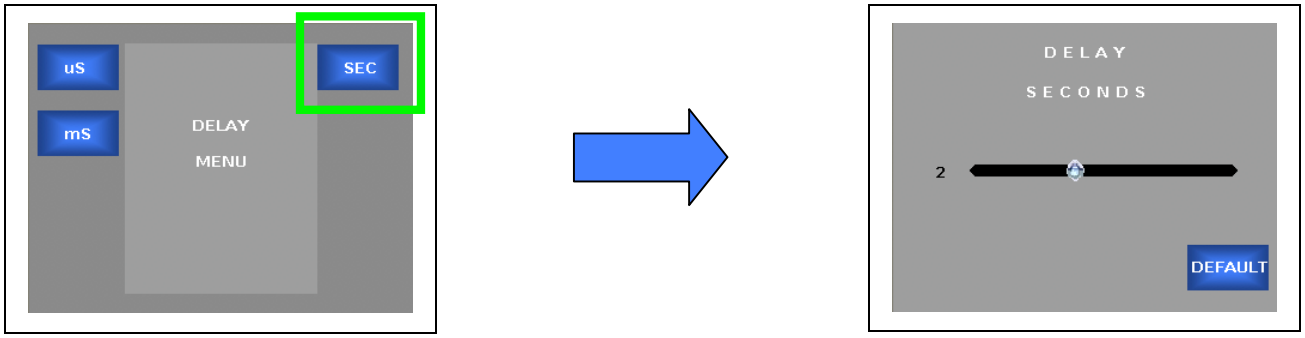
Audio Delay Menu (continued)



Audio Delay (mS) – Adjusts the audio delay in the currently selected video processing channel in millisecond increments. To adjust, turn the rotary encoder on the control panel. Press the Default soft button to go back to the default value.

- The range of adjustment is 0 to 999mS
- The default setting is 106mS

Press the BACK button to move to the previous menu.
Press the Home button to go back to the Main Menu.



Audio Delay (Sec) – Adjusts the audio delay in the currently selected video processing channel in one second increments. To adjust, turn the rotary encoder on the control panel. Press the Default soft button to go back to the default value.

- The range of adjustment is 0 to 4 seconds
- The default setting is 0 seconds

Press the BACK button to move to the previous menu.
Press the Home button to go back to the Main Menu.

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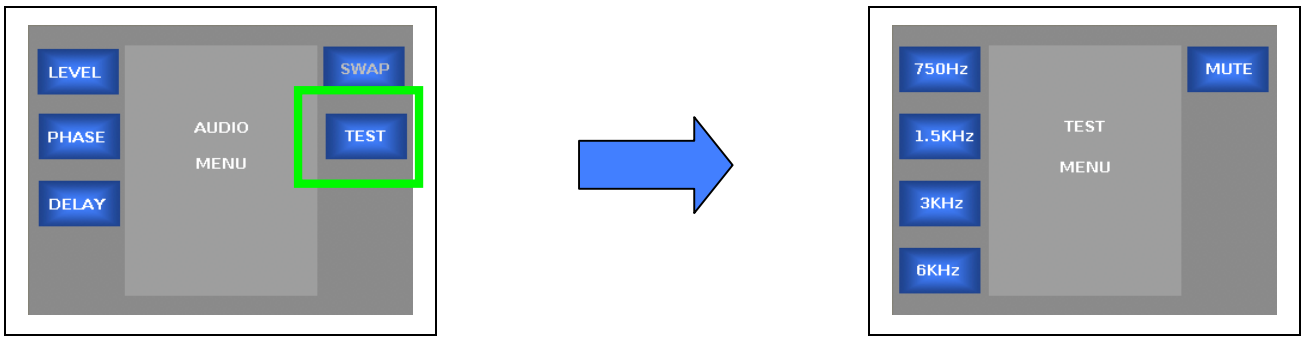
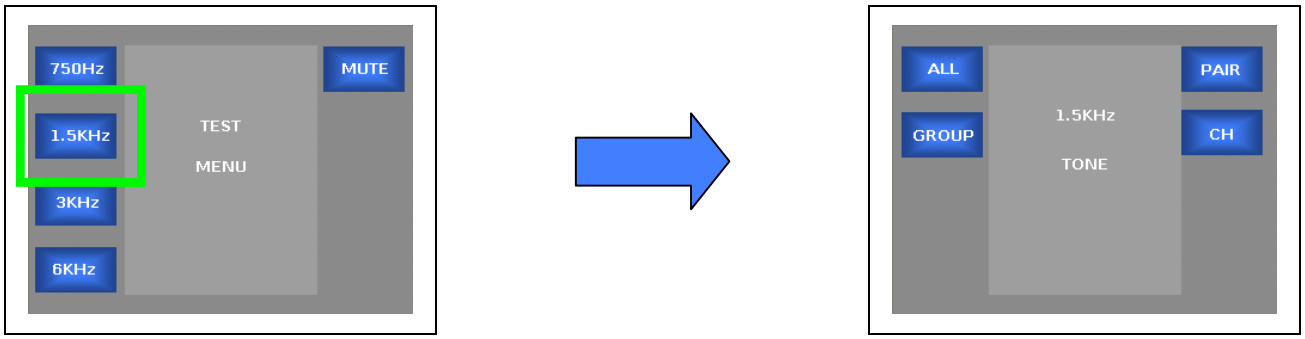
Audio Test Menu

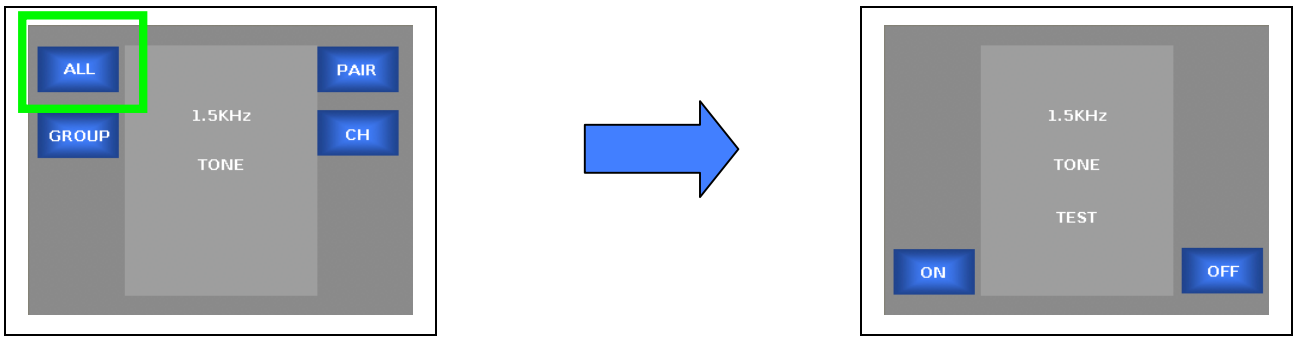


750Hz – Enables a 750Hz audio tone for the selected audio channel(s)
1.5KHz - Enables a 1.5KHz audio tone for the selected audio channel(s)
3KHz - Enables a 3KHz audio tone for the selected audio channel(s)
6KHz - Enables a 6KHz audio tone for the selected audio channel(s)
Mute – Mutes the selected audio channel(s)

Audio Test Tone – All Channels



Press the BACK button to move to the previous menu.
Press the Home button to go back to the Main Menu.



Audio Test Tone (ALL) – Enables the selected audio test tone for all audio channels.

- ON – Enables the selected audio test tone
- OFF – Disables the selected audio test tone

Note: At present there are 8 audio channels assigned to each video processing channel in a dual-channel VC100. A single channel VC100 has 16-channels of audio.

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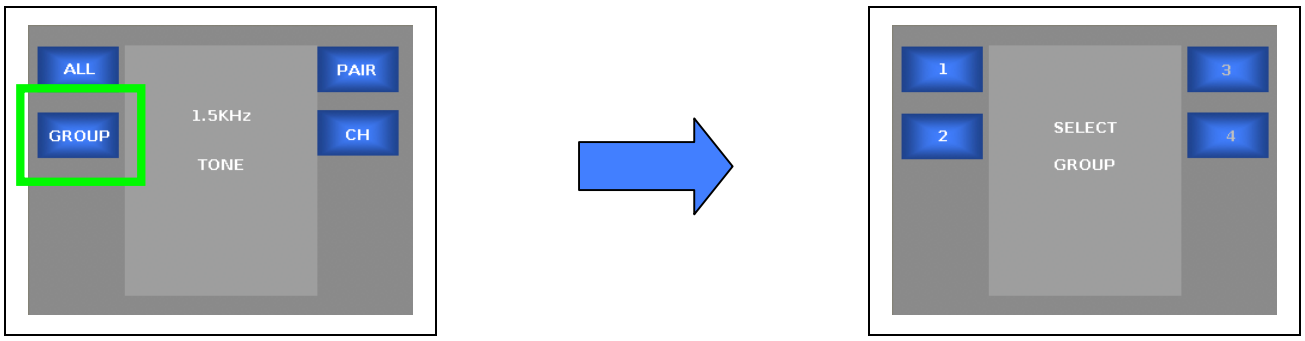
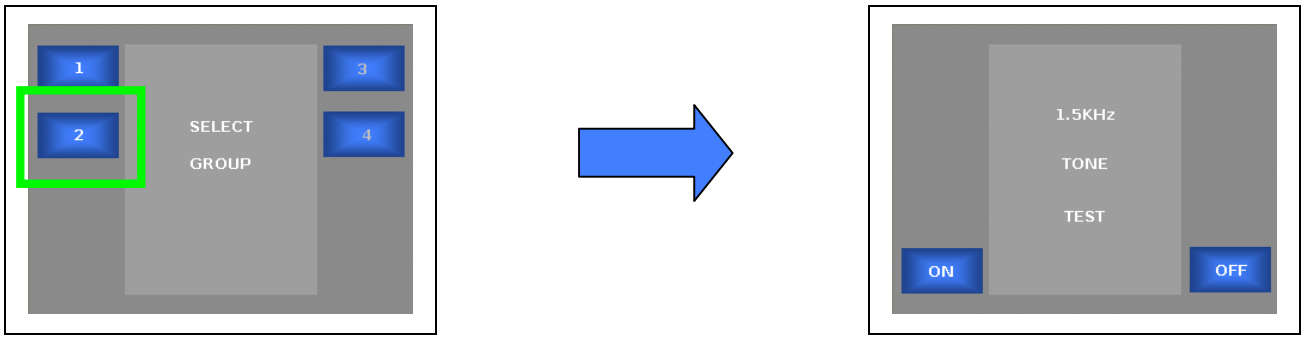
Audio Test Tone – by Audio Groups



- 1 – Enables the selected audio test tone for the channels in Group 1 (channels 1 – 4)
- 2 – Enables the selected audio test tone for the channels in Group 2 (channels 5 – 8)
- 3 – Enables the selected audio test tone for the channels in Group 3 (channels 9 – 12)
- 4 – Enables the selected audio test tone for the channels in Group 4 (channels 13 – 16)



Audio Test Tone (Groups) – Enables the selected audio test tone for the selected group.

- ON – Enables the selected audio test tone
- OFF – Disables the selected audio test tone

Press the BACK button to move to the previous menu.
Press the Home button to go back to the Main Menu.

Note: At present there are 8 audio channels assigned to each video processing channel in a dual-channel VC100. A single channel VC100 has 16-channels of audio.

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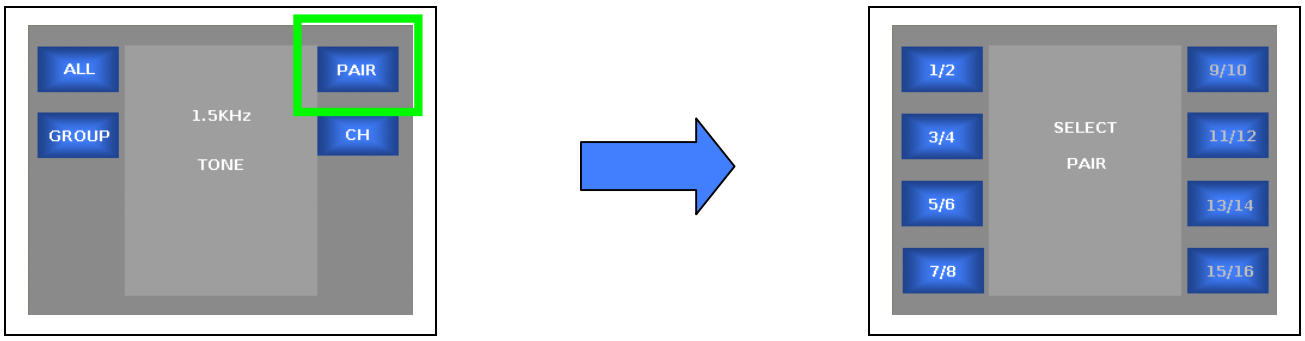
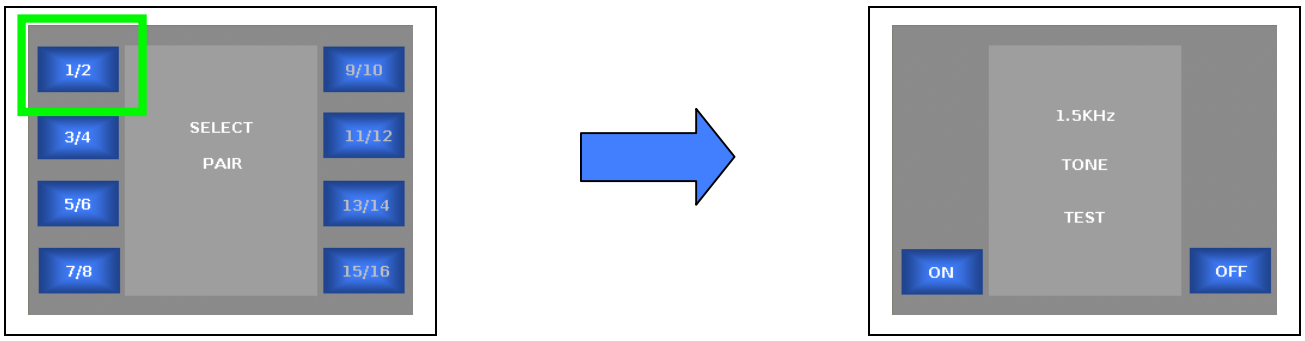
Audio Test Tones – by Audio Pairs



- 1/2 – Enables the selected audio test tone for the channels in Pair 1/2 (channels 1 & 2)
- 3/4 – Enables the selected audio test tone for the channels in Pair 3/4 (channels 3 & 4)
- 5/6 – Enables the selected audio test tone for the channels in Pair 5/6 (channels 5 & 6)
- 7/8 – Enables the selected audio test tone for the channels in Pair 7/8 (channels 7 & 8)
- 9/10 – Enables the selected audio test tone for the channels in Pair 9/10 (channels 9 & 10)
- 11/12 – Enables the selected audio test tone for the channels in Pair 11/12 (channels 11 & 12)
- 13/14 – Enables the selected audio test tone for the channels in Pair 13/14 (channels 13 & 14)
- 15/16 – Enables the selected audio test tone for the channels in Pair 15/16 (channels 15 & 16)



Audio Test Tone (Pairs) – Enables the selected audio test tone for the selected pair.

- ON – Enables the selected audio test tone
- OFF – Disables the selected audio test tone

Press the BACK button to move to the previous menu.
Press the Home button to go back to the Main Menu.

Note: At present there are 8 audio channels assigned to each video processing channel in a dual-channel VC100. A single channel VC100 has 16-channels of audio.

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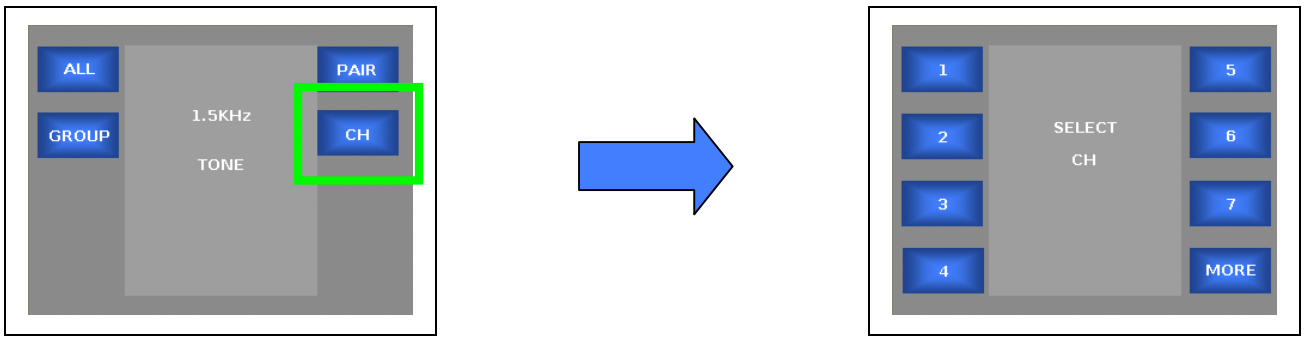
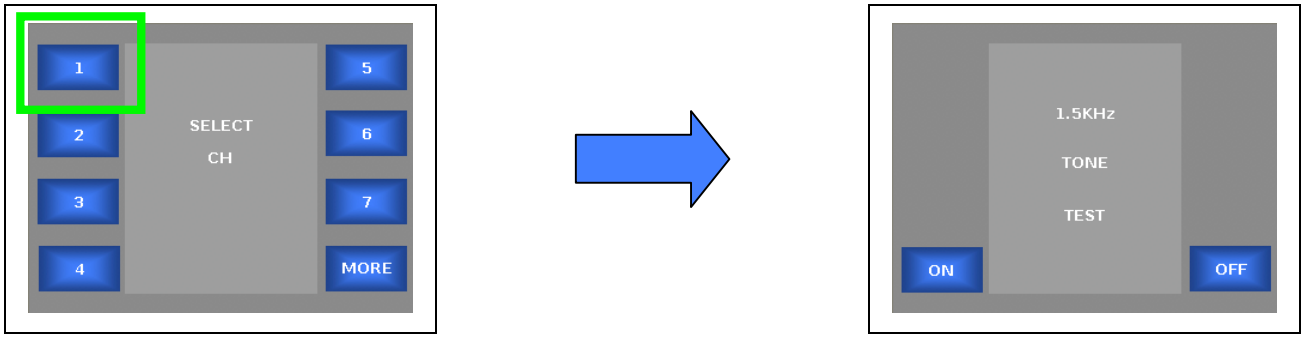
Audio Test Tones – by Audio Channels



- 1 – Enables the selected audio test tone for channel 1
- 2 – Enables the selected audio test tone for channel 2
- 3 – Enables the selected audio test tone for channel 3
- 4 – Enables the selected audio test tone for channel 4
- 5 – Enables the selected audio test tone for channel 5
- 6 – Enables the selected audio test tone for channel 6
- 7 – Enables the selected audio test tone for channel 7
- MORE – Takes the user to the next channel selection menu



Audio Test Tone (Channels 1-7) – Enables the selected audio test tone for the selected channel.

- ON – Enables the selected audio test tone
- OFF – Disables the selected audio test tone

Press the BACK button to move to the previous menu.
Press the Home button to go back to the Main Menu.

Note: At present there are 8 audio channels assigned to each video processing channel in a dual-channel VC100. A single channel VC100 has 16-channels of audio.

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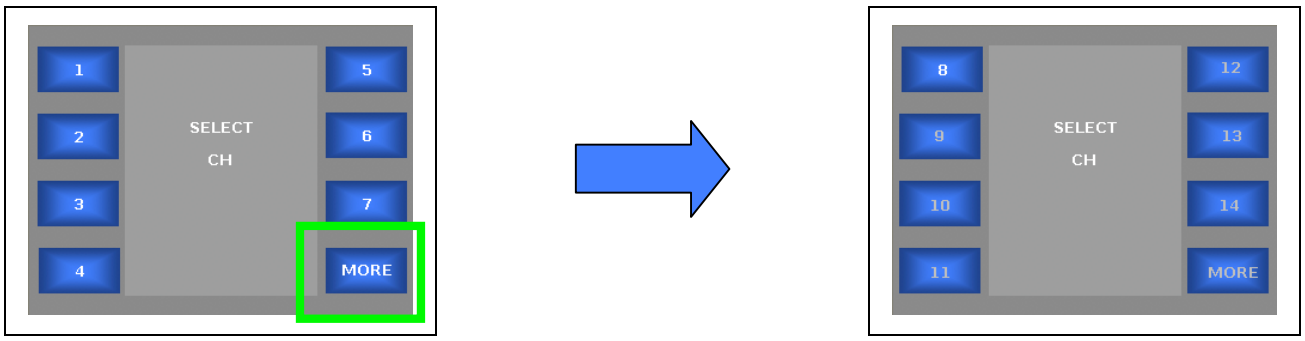
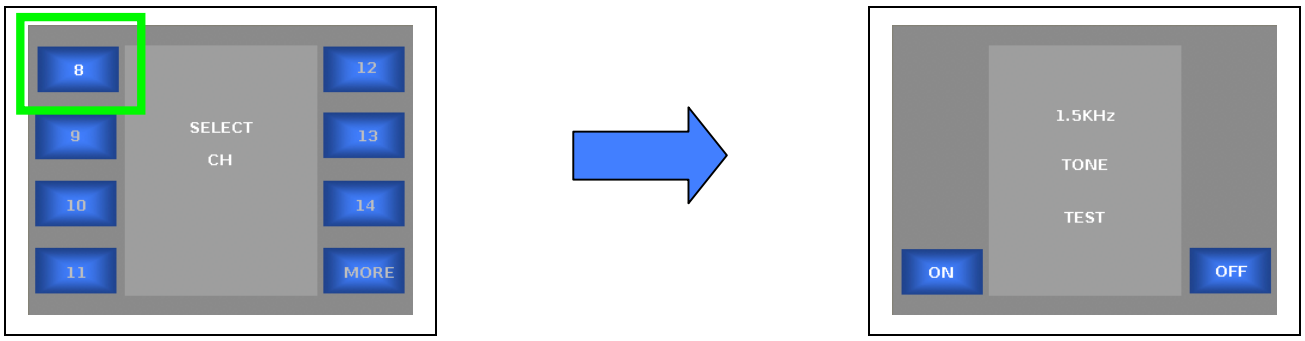
Audio Test Tones – by Audio Channels (continued)



- 8 – Enables the selected audio test tone for channel 8
- 9 – Enables the selected audio test tone for channel 9
- 10 – Enables the selected audio test tone for channel 10
- 11 – Enables the selected audio test tone for channel 11
- 12 – Enables the selected audio test tone for channel 12
- 13 – Enables the selected audio test tone for channel 13
- 14 – Enables the selected audio test tone for channel 14
- MORE – Takes the user to the next channel selection menu



Audio Test Tone (Channels 8-14) – Enables the selected audio test tone for the selected channel.

- ON – Enables the selected audio test tone
- OFF – Disables the selected audio test tone

Press the BACK button to move to the previous menu.
Press the Home button to go back to the Main Menu.

Note: At present there are 8 audio channels assigned to each video processing channel in a dual-channel VC100. A single channel VC100 has 16-channels of audio.

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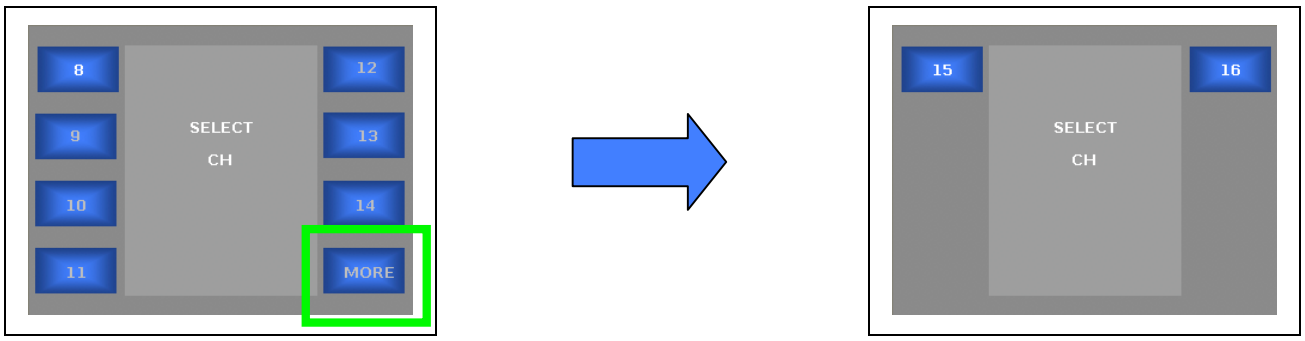
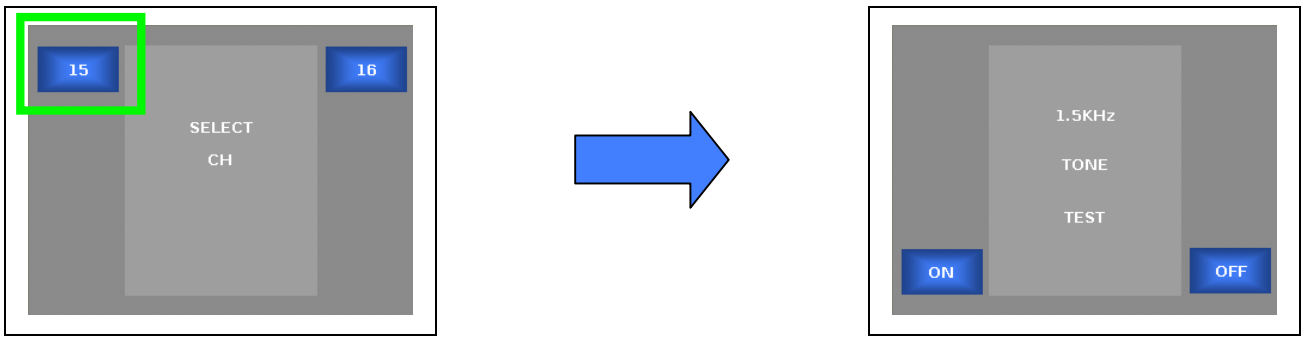
Audio Test Tones – by Audio Channels (continued)



- 15 – Enables the selected audio test tone for channel 15
- 16 – Enables the selected audio test tone for channel 16



Audio Test Tone (Channels 15-16) – Enables the selected audio test tone for the selected channel.

- ON – Enables the selected audio test tone
- OFF – Disables the selected audio test tone

Press the BACK button to move to the previous menu.
Press the Home button to go back to the Main Menu.

Note: At present there are 8 audio channels assigned to each video processing channel in a dual-channel VC100. A single channel VC100 has 16-channels of audio.

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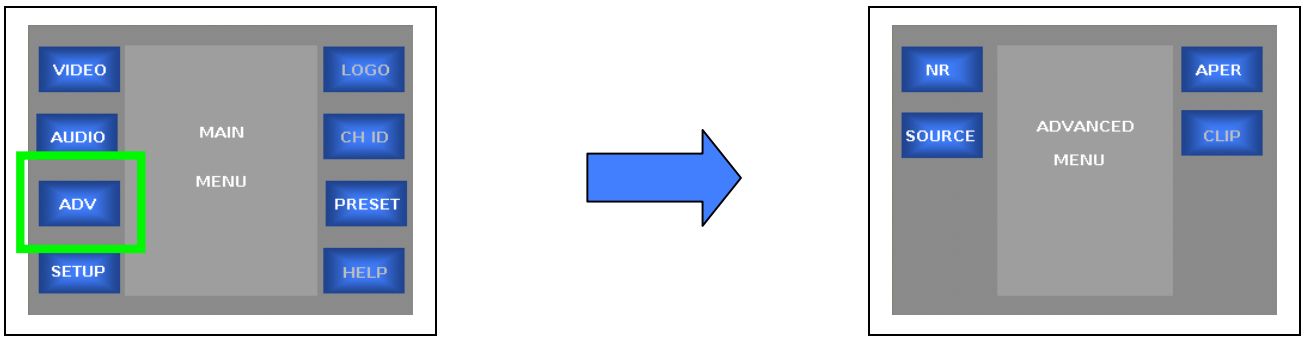
Advanced Menu



ADV – Takes the user to the Advanced menu

- NR – Takes the user to the Noise Reduction menu
- SOURCE – Takes the user to the Source menu
- APER – Adjusts the Aperture filter used in frame-rate conversions
- CLIP – Not functional / Future expansion

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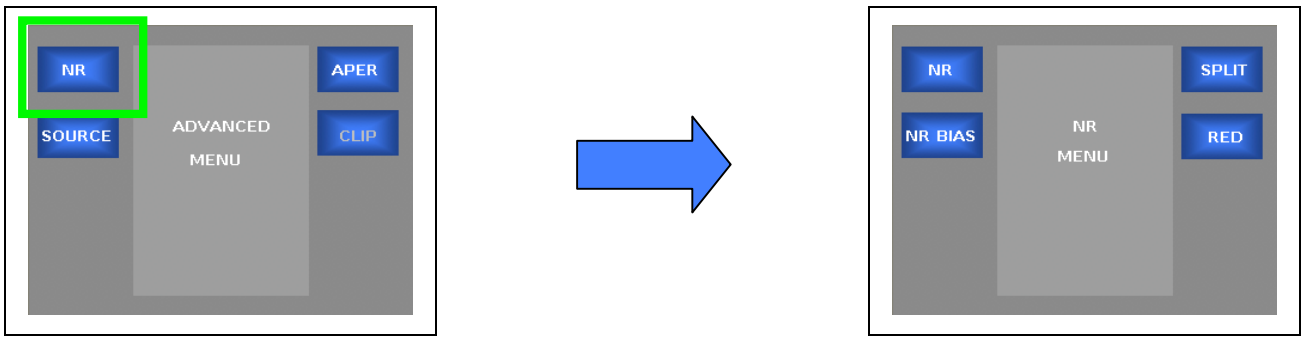
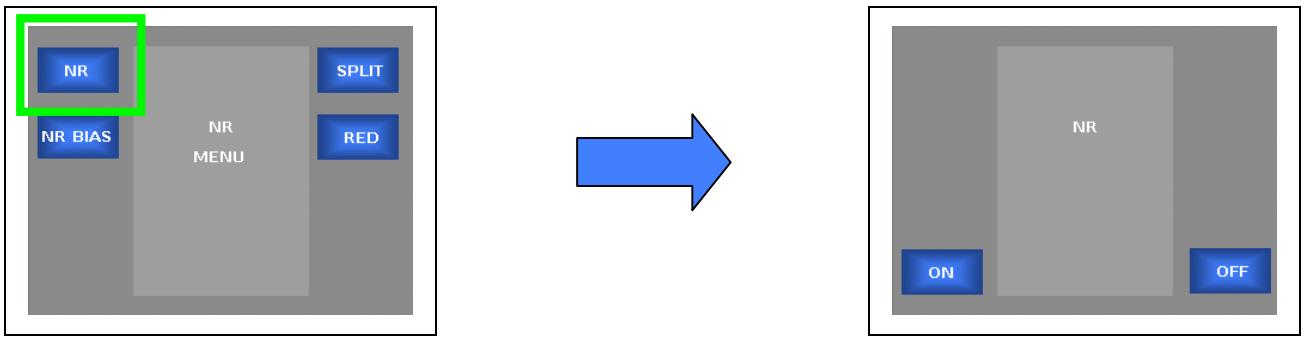
Noise Reduction Menu



NR – Takes the user to the Noise Reduction Menu

The Noise Reducer is a motion adaptive temporal recursive filter that works well in removing random and Gaussian noise. Each pixel is labeled as motion, no motion, or noise. Each of these classes of pixels is treated differently in the noise reduction process. For pixels in which there is no motion, low-level Gaussian noise may be reduced via temporal processing by a weighted averaging over successive frames. For pixels labeled as random noise, spatial processing replaces these pixels. Pixels labeled as being "in motion" are retained "as is" to avoid artifacts that may be introduced through temporal processing.



NR – Enables/Disables Noise Reduction

- ON – Enables Noise Reduction
- OFF – Disables Noise Reduction

Press the BACK button to move to the previous menu.
Press the Home button to go back to the Main Menu.

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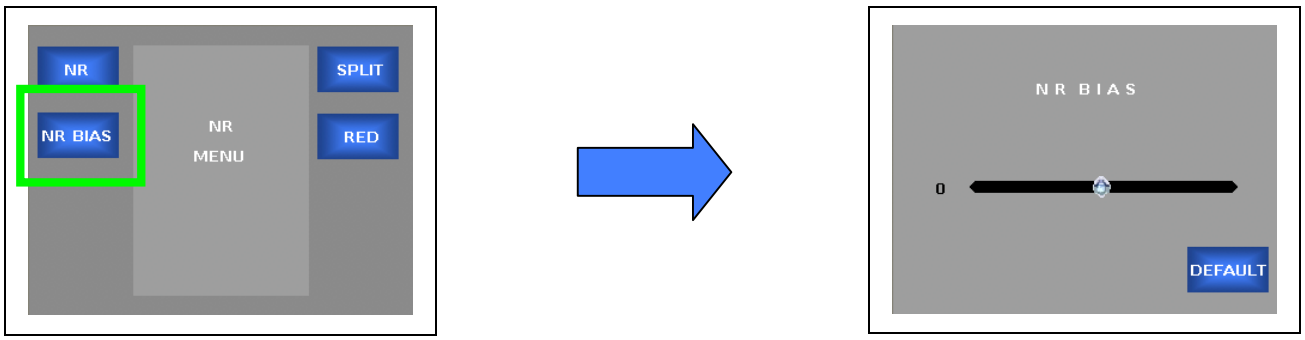
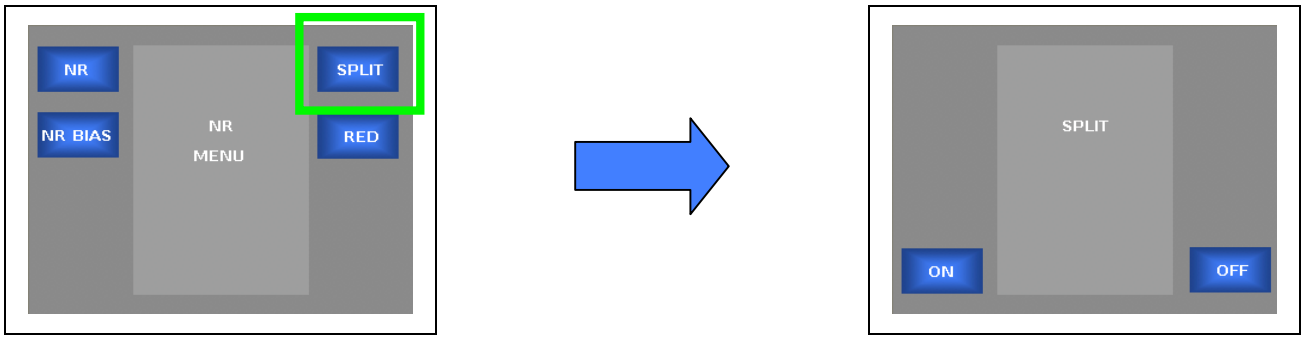
Noise Reduction Menu (continued)



NR Bias – Adjusts the Noise Reduction Bias level. To adjust, turn the rotary encoder on the front panel.

- The range of adjustment is -6dB to +6dB.
- The default setting is 0dB.

Press the BACK button to move to the previous menu.
Press the Home button to go back to the Main Menu.



SPLIT – Enables/Disables the noise reduction Split Screen mode

- ON – Enables the Noise Reduction, Split Screen mode. In this mode the image is divided vertically. The Left half of the image will not have any noise reduction applied. The Right half of the image will have noise reduction applied.
- OFF – Disables the Noise Reduction, Split Screen mode

Press the BACK button to move to the previous menu.
Press the Home button to go back to the Main Menu.

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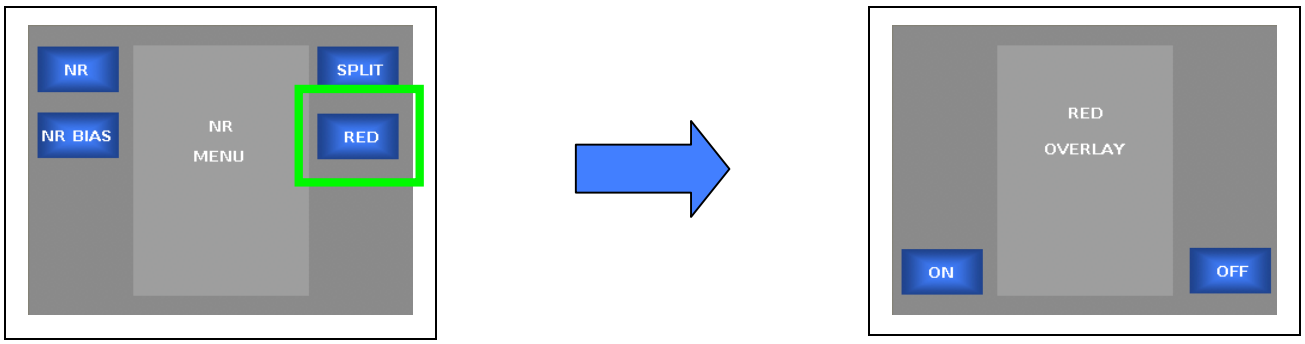
Noise Reduction Menu (continued)



RED – Enables/Disables the noise reduction Red overlay

- ON – Enables the Noise Reduction, Red Overlay. In this mode, pixels that are interpreted as in motion will be colored red.
- OFF – Disables the Noise Reduction, Red Overlay

Press the BACK button to move to the previous menu.
Press the Home button to go back to the Main Menu.

In the Temporal Recursive Filter, the red overlay will show the pixels in the image that have been determined to be in motion. These pixels will not have any noise reduction applied to them. This helps to identify which pixels are being processed by the temporal recursive filter in the image.

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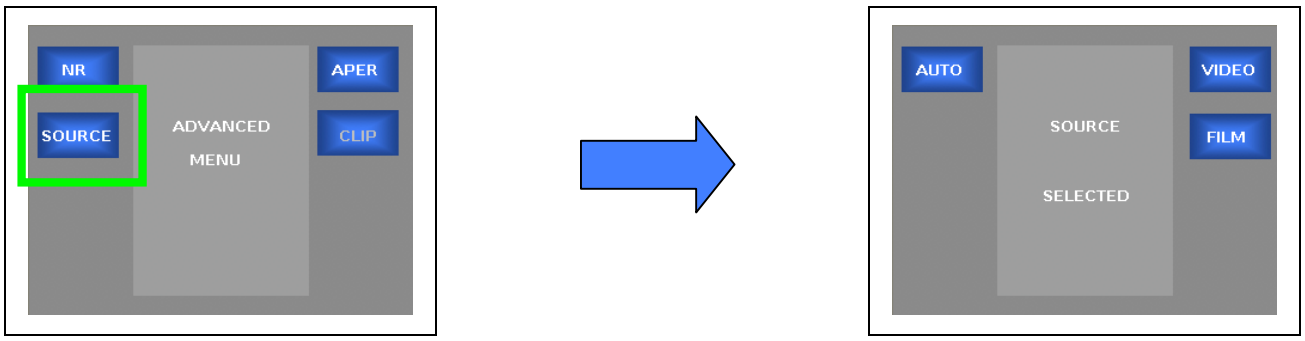
Source Menu



SOURCE – Takes the user to the Source Menu

- **Auto** - Select this mode if the source material is a mixture of film and video. This mode selects a compromise algorithm that will look for film- and video-based material. For best results when the source material is known to be exclusively either film or video, select the **Film** or **Video** modes below.
- **Film** – Select this mode when the source material is film-originated. This mode will optimize the algorithms for processing film-originated material.
- **Video** – Select this mode if the source material is interlaced video material. This mode will optimize the algorithms for processing interlaced material.

Press the BACK button to move to the previous menu.
Press the Home button to go back to the Main Menu.

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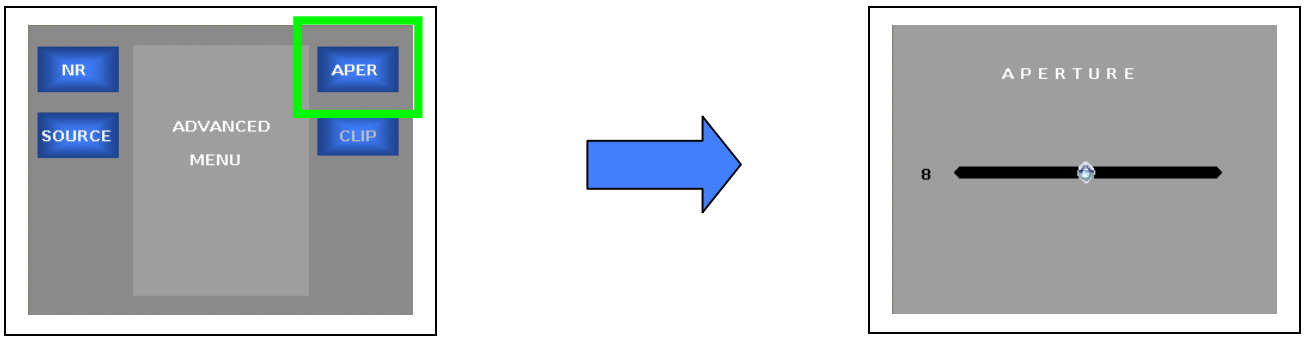
Aperture Menu



APER – Takes the user to the Aperture Menu
When performing a frame rate conversion, the interpolation aperture is used to set the characteristics of the filter used to create the synthetic information in a frame rate conversion. A setting of 0 (drama) will give a sharper image with more potential for judder in motion areas. A setting of 3 (sport) will give a softer image with more blur in motion areas.

- The range of adjustment is 0 to 3
- The default setting is 0

Press the BACK button to move to the previous menu.
Press the Home button to go back to the Main Menu.

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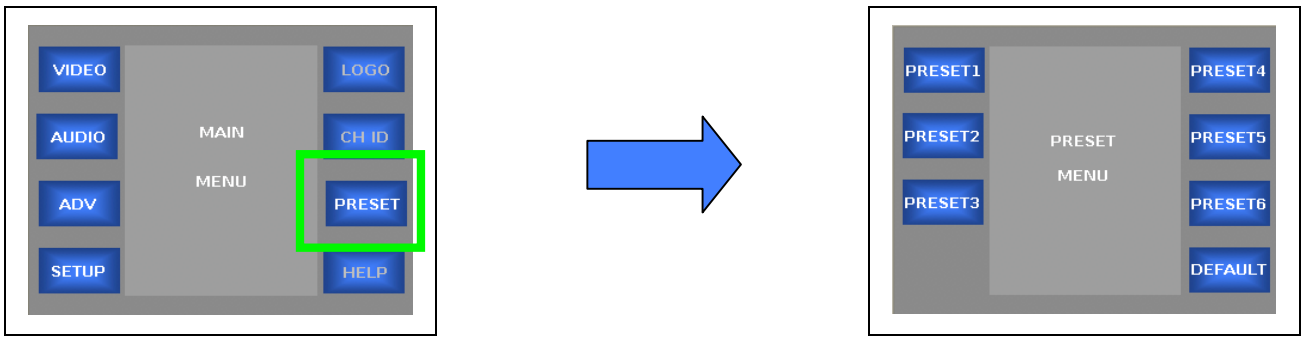
Preset Menu



PRESET – Allows the user to save and recall system settings to system memory. The PRESETS will capture all current settings for the system.

- PRESET1
- PRESET2
- PRESET3
- PRESET4
- PRESET5
- PRESET6
- DEFAULT – The DEFAULT PRESET is used as the power-on PRESET. Parameters saved to this PRESET will be loaded when the system is powered-on.

Note: At present the Presets do not capture all system parameters. See Appendix B for a list of the parameters that are being captured.

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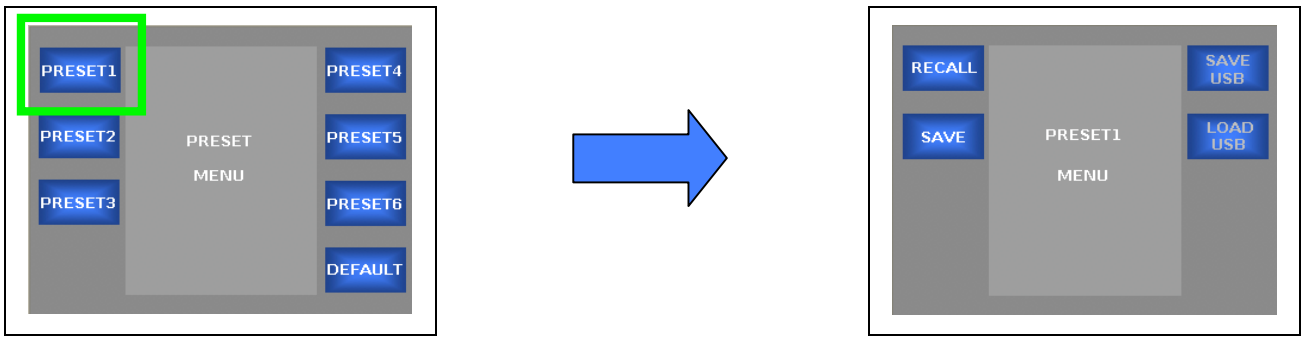
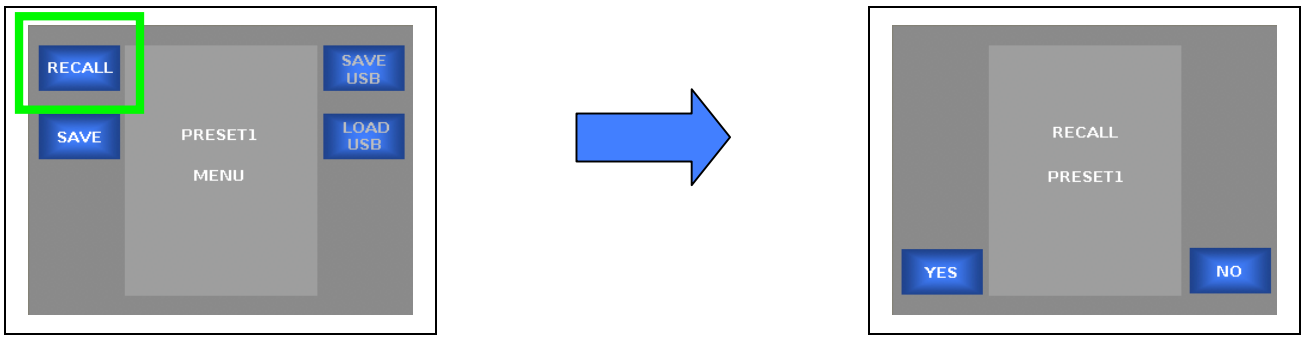
Preset Menu (continued)

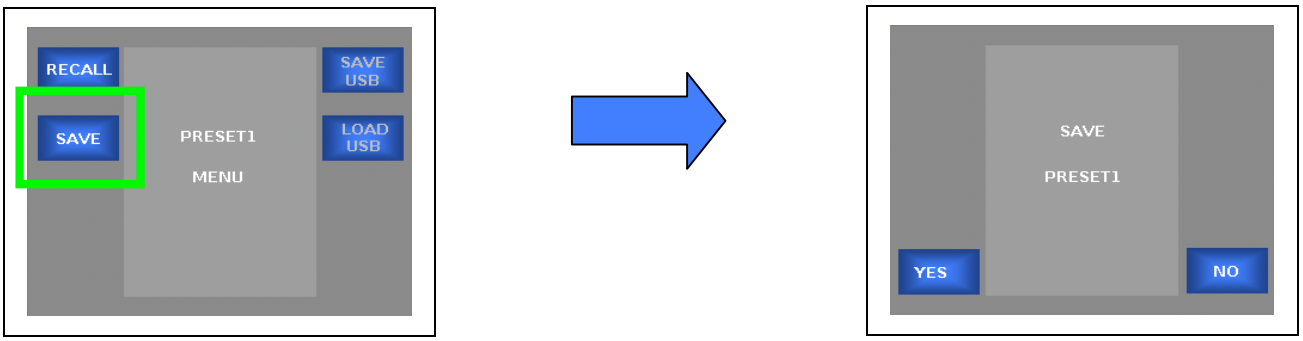


PRESET1 – Saves the current system settings to PRESET1 or Recalls the stored values from PRESET1



RECALL – Recalls the user preset from system memory
- YES – Recalls the stored values from the selected PRESET
- NO – Cancels the Recall

Press the BACK button to move to the previous menu.
Press the Home button to go back to the Main Menu.



SAVE – Saved the current state of the system to the select user preset
- YES – Saves the current system settings to the selected PRESET
- NO – Cancels the Save

Press the BACK button to move to the previous menu.
Press the Home button to go back to the Main Menu.

SAVE USB – Not functional / Future expansion
LOAD USB - Not functional / Future expansion

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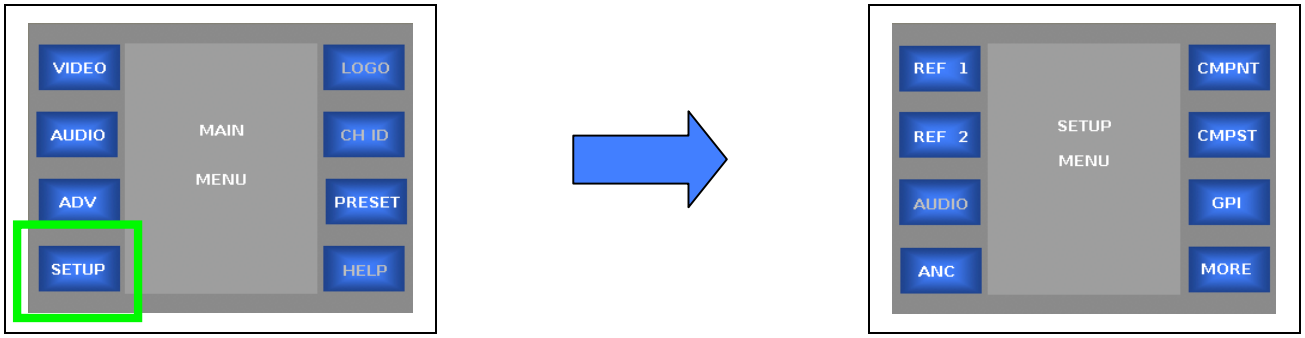
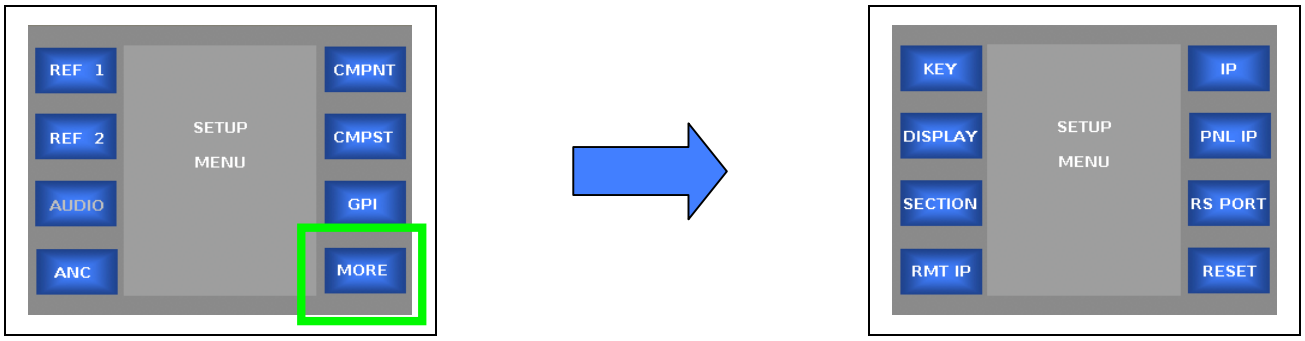
Configuration

Set-up Menu – Page 1



SETUP – Takes the user to the SETUP menu

- REF 1 – Takes the user to the External Reference 1 Menu
- REF 2 – Takes the user to the External Reference 2 Menu
- AUDIO – Not functional / Future expansion
- ANC – Takes the user to the Ancillary Data Menu
- CMPNT – Not functional / Future expansion
- CMPST – Not functional / Future expansion
- GPI – Not functional / Future expansion
- MORE – Takes the user to additional Setup menus



MORE – Takes the user to additional Setup menus

- KEY – Used to enter the System Access Key
- DISPLAY – Not functional / Future expansion
- SECTION – Not functional / Future expansion
- RMT IP – Set the IP of the VC100 chassis that the Remote Control Panel will communicate with
- IP – Allows the user to set the IP address for the chassis
- PNL IP – Allow the user to set the IP address for the Front Panel
- RS PORT – Not functional / Future expansion
- RESET – Not functional / Future expansion

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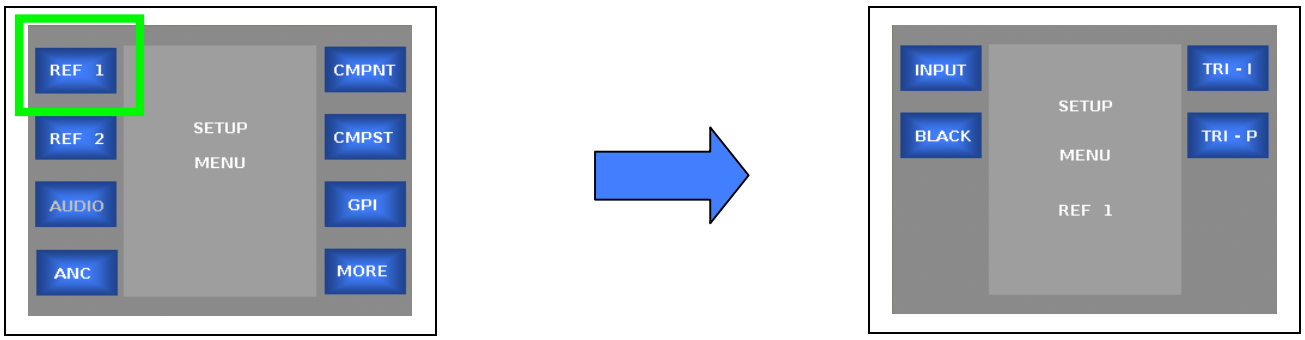
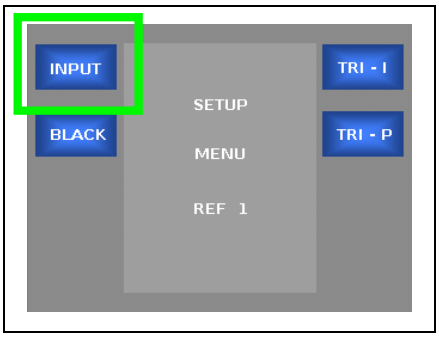
External Reference 1 Menu



REF 1 – Takes the user to the External Reference 1 Menu

- **INPUT** – Selects the current input video source as the reference for video processing channel 1
- **BLACK** – Sets analog blackburst as the reference for video processing channel 1
- **TRI-I** – Sets HD tri-level sync (interlaced) as the reference for video processing channel 1
- **TRI-P** - Sets HD tri-level sync (progressive) as the reference for video processing channel 1



INPUT – Selects the current input video source as the reference for video processing channel 1

Press the BACK button to move to the previous menu.
Press the Home button to go back to the Main Menu.

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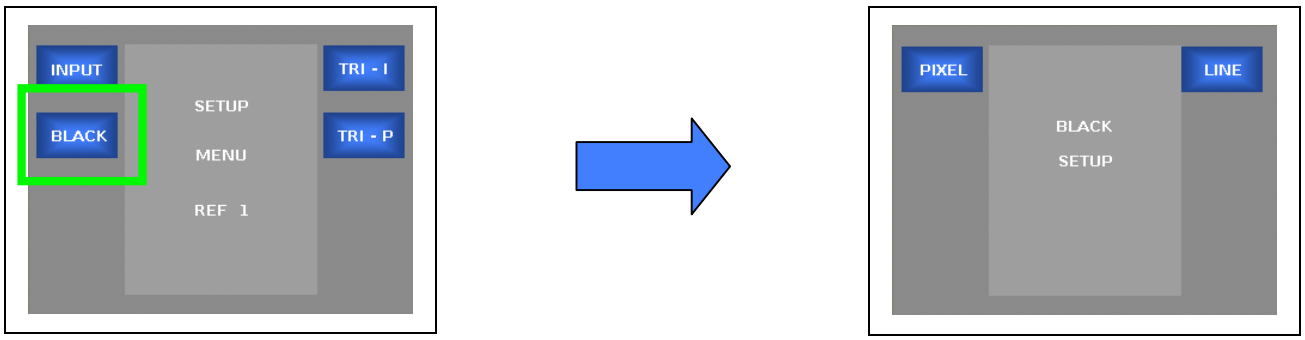
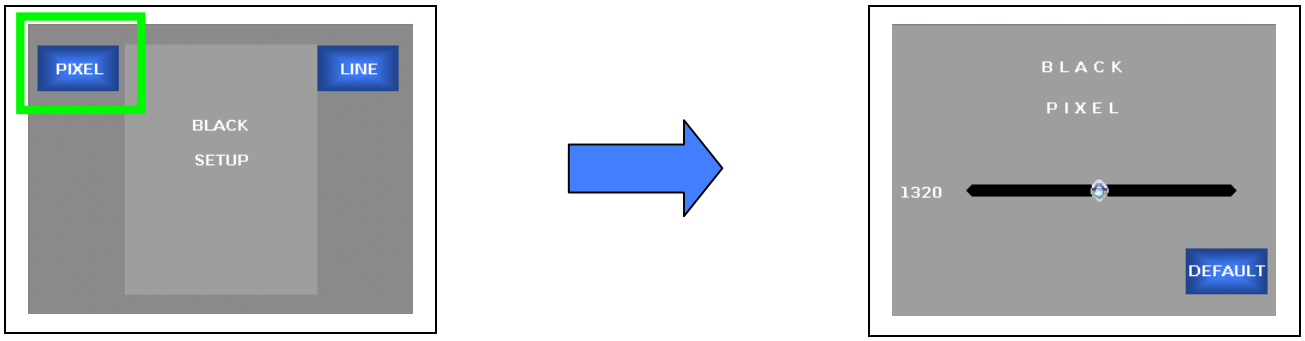
External Reference 1 Menu (continued)



Black – Sets analog blackburst as the reference for video processing channel 1.

- PIXEL - Adjusts the Pixel timing of the output relative to the analog blackburst reference for video processing channel 1.
- LINE - Adjusts the Line timing of the output relative to the analog blackburst reference for video processing channel 1.



PIXEL - Adjusts the Pixel timing of the output relative to the analog blackburst reference for video processing channel 1. To adjust, turn the rotary encoder on the control panel. Press the DEFAULT soft button to go back to the default value.

- The range of adjustment is based on the current input/output format selection.

Press the BACK button to move to the previous menu.
Press the Home button to go back to the Main Menu.

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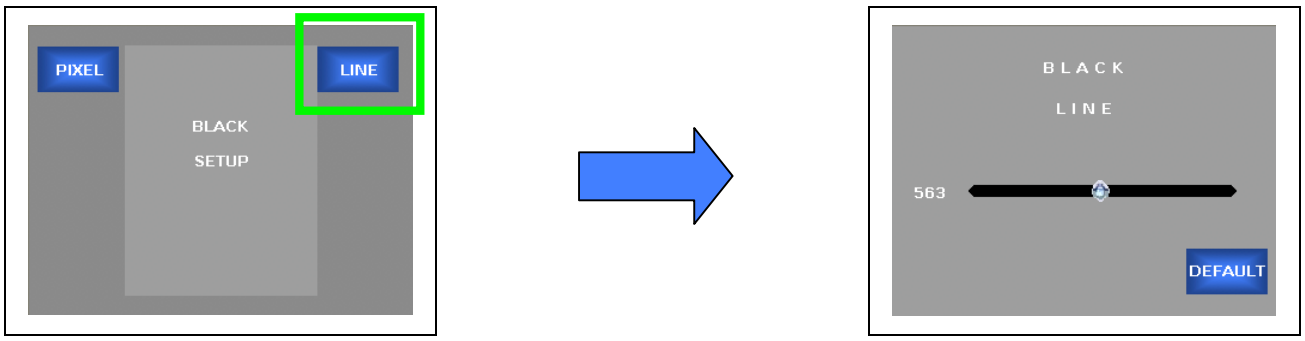
External Reference 1 Menu (continued)



LINE - Adjusts the Line timing of the output relative to the analog blackburst reference for video processing channel 1. To adjust, turn the rotary encoder on the control panel. Press the DEFAULT soft button to go back to the default value.

- The range of adjustment is based on the current input/output format selection.

Press the BACK button to move to the previous menu.
Press the Home button to go back to the Main Menu.

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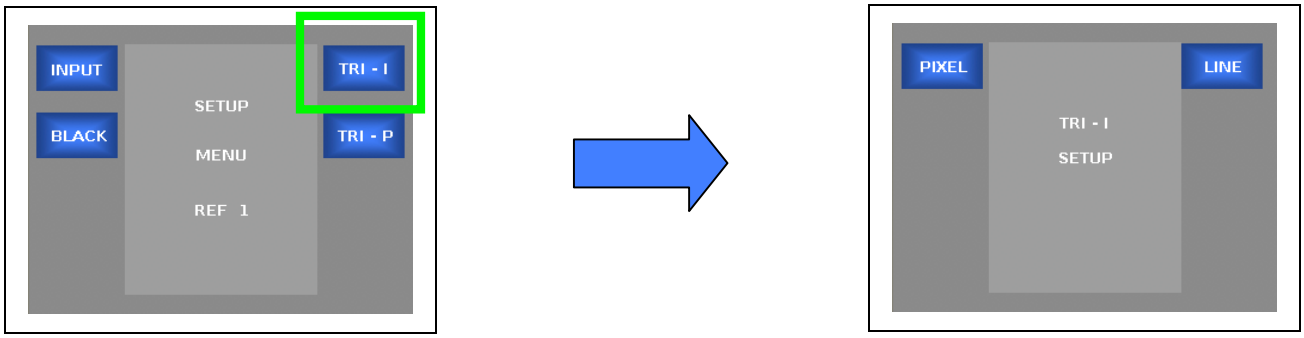
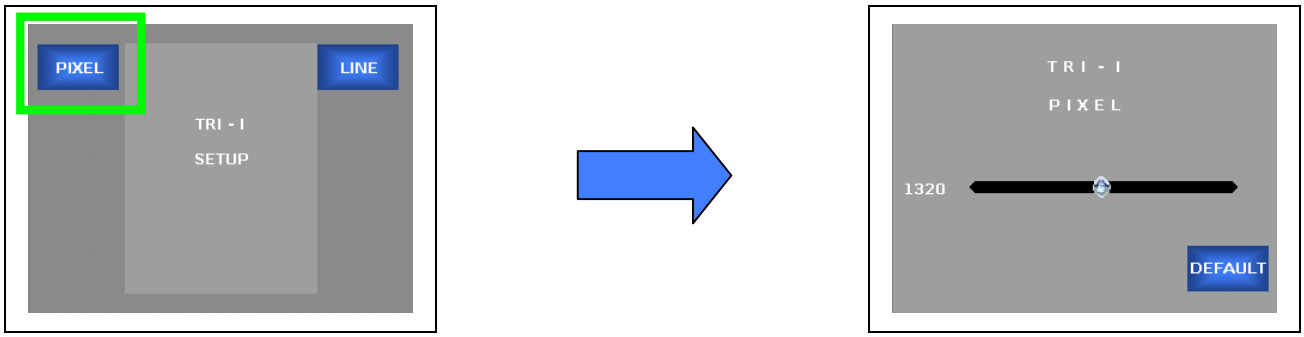
External Reference 1 Menu (continued)



TRI-I – Sets HD tri-level sync (interlaced) as the reference for video processing channel 1.

- **PIXEL** - Adjusts the Pixel timing of the output relative to the HD tri-level sync (interlaced) reference for video processing channel 1.
- **LINE** - Adjusts the Line timing of the output relative to the HD tri-level sync (interlaced) reference for video processing channel 1.



PIXEL - Adjusts the Pixel timing of the output relative to the HD tri-level sync (interlaced) reference for video processing channel 1. To adjust, turn the rotary encoder on the control panel. Press the DEFAULT soft button to go back to the default value.

- The range of adjustment is based on the current input/output format selection.

Press the BACK button to move to the previous menu.
Press the Home button to go back to the Main Menu.

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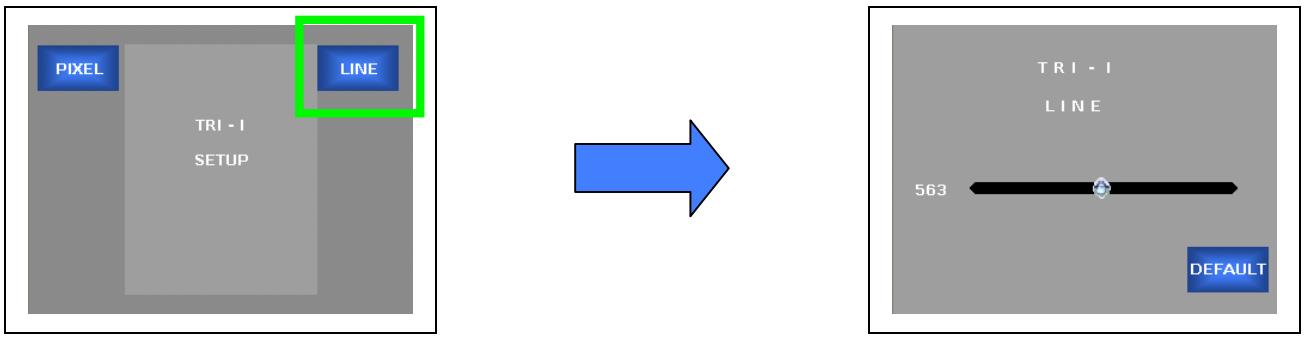
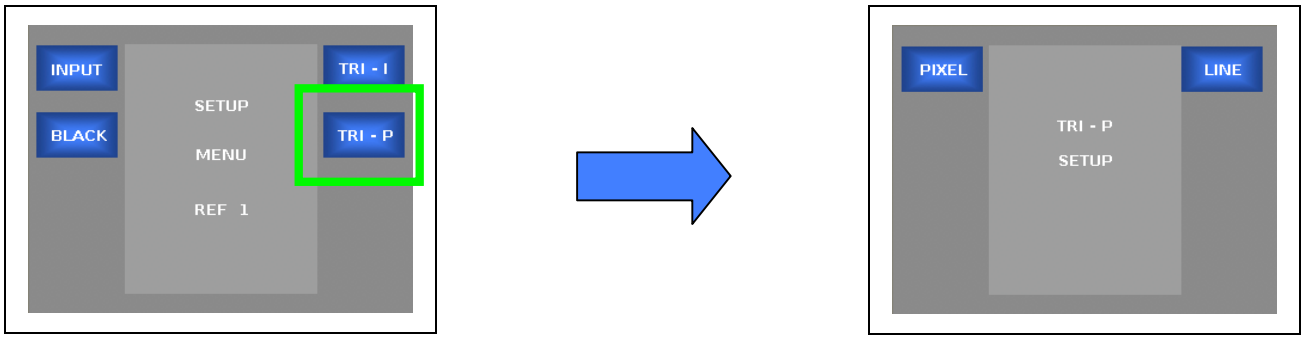
External Reference 1 Menu (continued)



LINE - Adjusts the Line timing of the output relative to the HD tri-level sync (interlaced) reference for video processing channel 1. To adjust, turn the rotary encoder on the control panel. Press the DEFAULT soft button to go back to the default value.

- The range of adjustment is based on the current input/output format selection.

Press the BACK button to move to the previous menu.
Press the Home button to go back to the Main Menu.



TRI-P – Sets HD tri-level sync (progressive) as the reference for video processing channel 1.

- PIXEL - Adjusts the Pixel timing of the output relative to the HD tri-level sync (progressive) reference for video processing channel 1.
- LINE - Adjusts the Line timing of the output relative to the HD tri-level sync (progressive) reference for video processing channel 1.

Press the BACK button to move to the previous menu.
Press the Home button to go back to the Main Menu.

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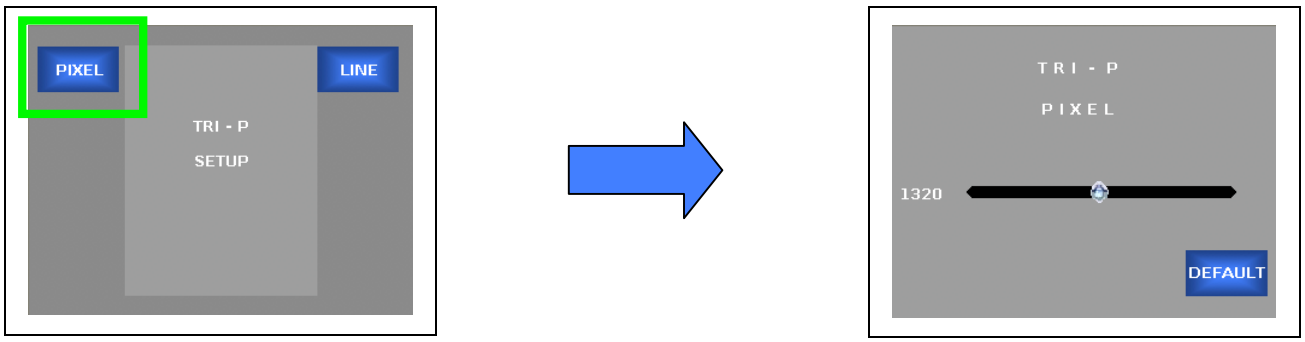
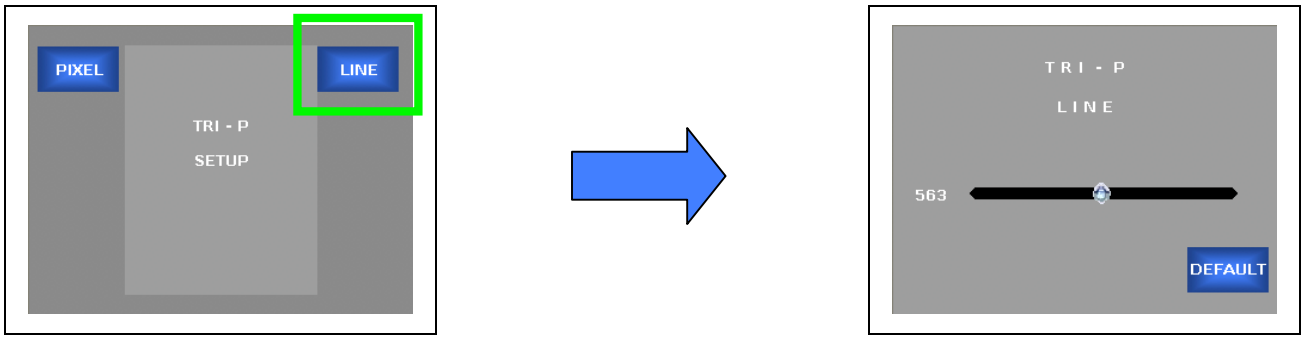
External Reference 1 Menu (continued)



PIXEL - Adjusts the Pixel timing of the output relative to the HD tri-level sync (progressive) reference for video processing channel 1. To adjust, turn the rotary encoder on the control panel. Press the DEFAULT soft button to go back to the default value.

- The range of adjustment is based on the current input/output format selection.

Press the BACK button to move to the previous menu.
Press the Home button to go back to the Main Menu.



LINE - Adjusts the Line timing of the output relative to the HD tri-level sync (progressive) reference for video processing channel 1. To adjust, turn the rotary encoder on the control panel. Press the DEFAULT soft button to go back to the default value.

- The range of adjustment is based on the current input/output format selection.

Press the BACK button to move to the previous menu.
Press the Home button to go back to the Main Menu.

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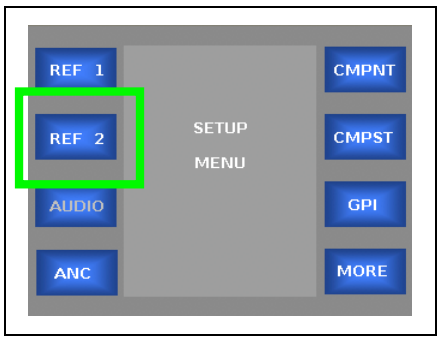
External Reference 2 Menu



REF 2 – Takes the user to the External Reference 2 Menu

Note: Refer to External Reference 1 Menu (page 77) for details.

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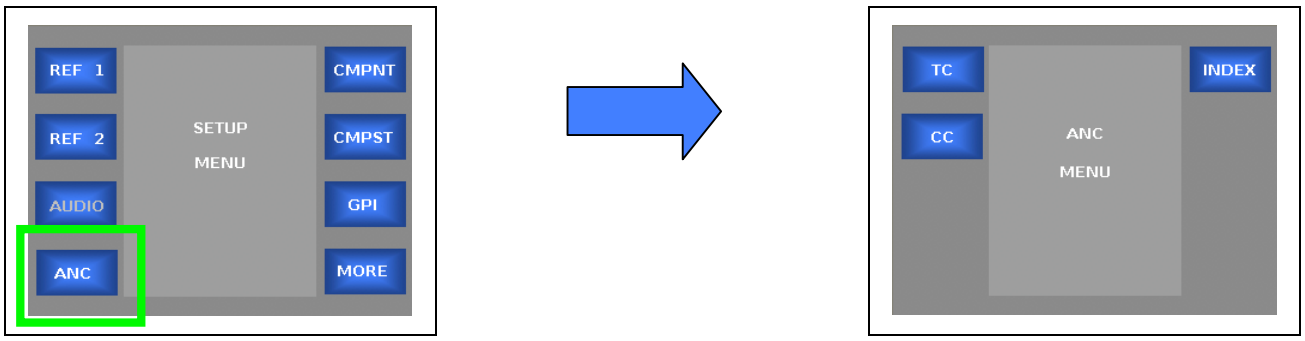
Ancillary Data Menu



ANC – Takes the user to the Ancillary Data Menu

- TC – Takes the user to the Timecode Menu
- CC – Takes the user to the Closed Caption menu
- INDEX – Not functional / Future expansion

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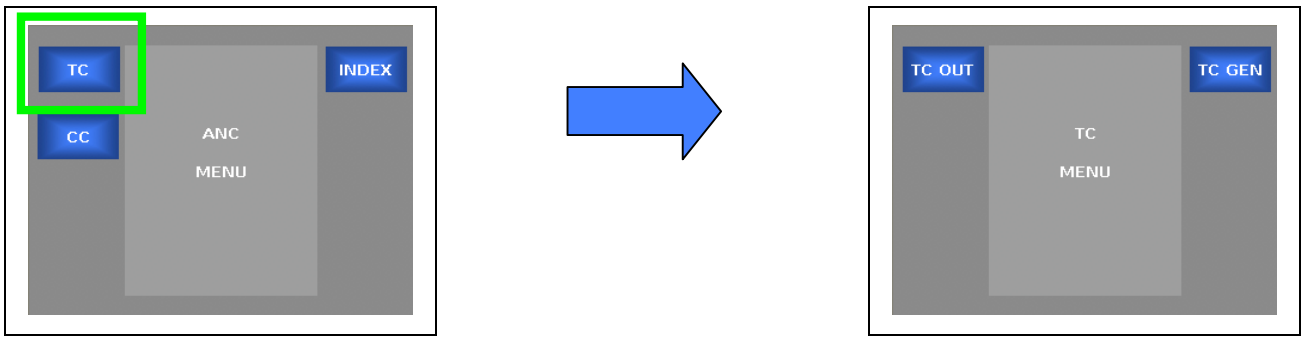
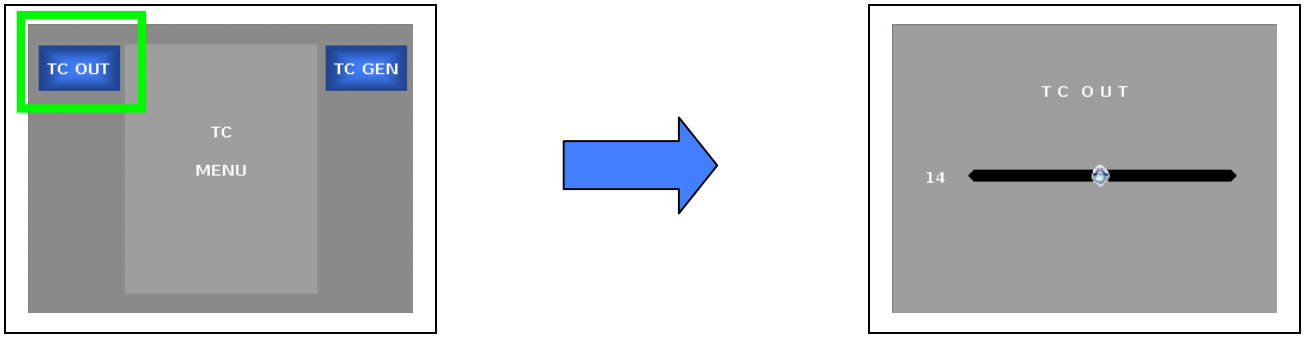
Timecode Menu



TC – Takes the user to the Timecode Menu

- TC OUT – Selects the line on which timecode will be inserted in an SD output.
- TC GEN – Not functional / Future expansion



TC OUT – Selects the line on which timecode will be inserted in an SD output. To adjust, turn the rotary encoder on the control panel. Press the DEFAULT soft button to go back to the default value.

- The range of adjustment is Line 9 to Line 19
- The default setting is 14

Press the BACK button to move to the previous menu.
Press the Home button to go back to the Main Menu.

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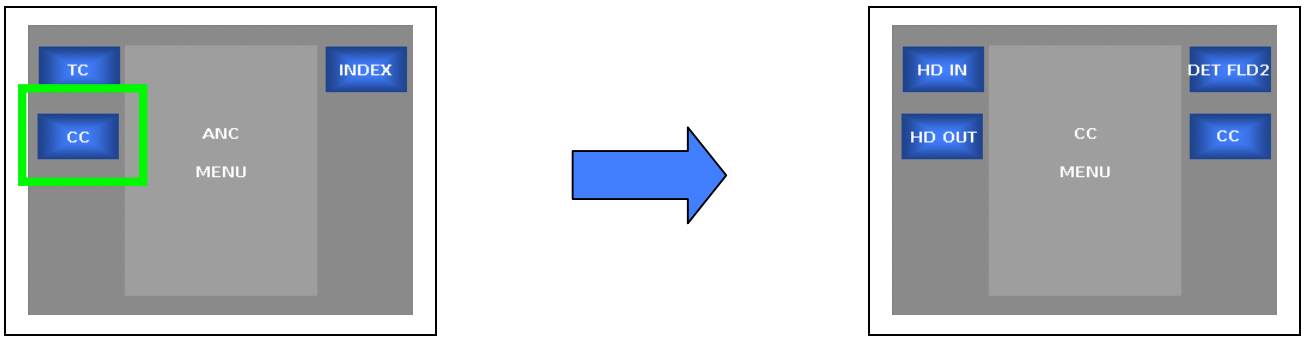
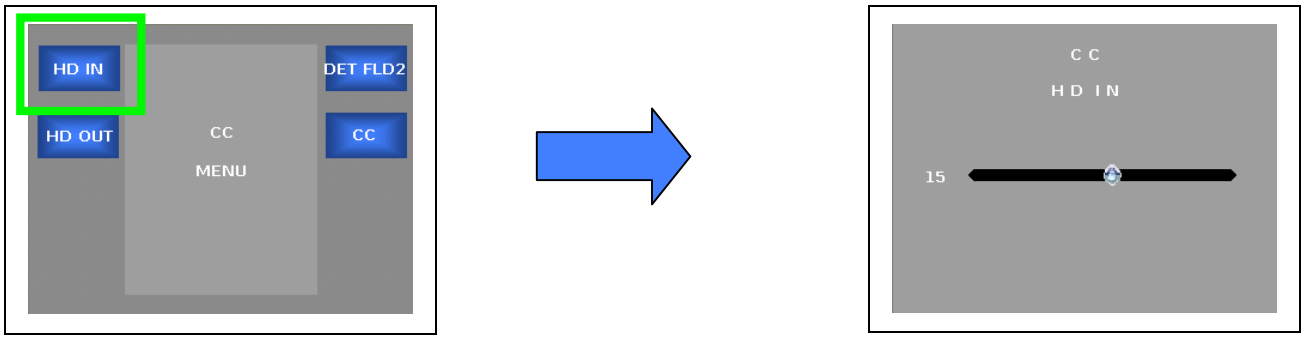
Closed Caption Menu



CC – Takes the user to the Closed Caption menu

- HD IN
- HD OUT
- DET FLD 2
- CC – Enables Closed Caption support



HD IN – Used to select the location of the closed caption information in the incoming HD signal. To adjust, turn the rotary encoder on the control panel. Press the DEFAULT soft button to go back to the default value.

- The range of adjustment is Line 9 to Line 19
- The default setting is Line 9

Press the BACK button to move to the previous menu.
Press the Home button to go back to the Main Menu.

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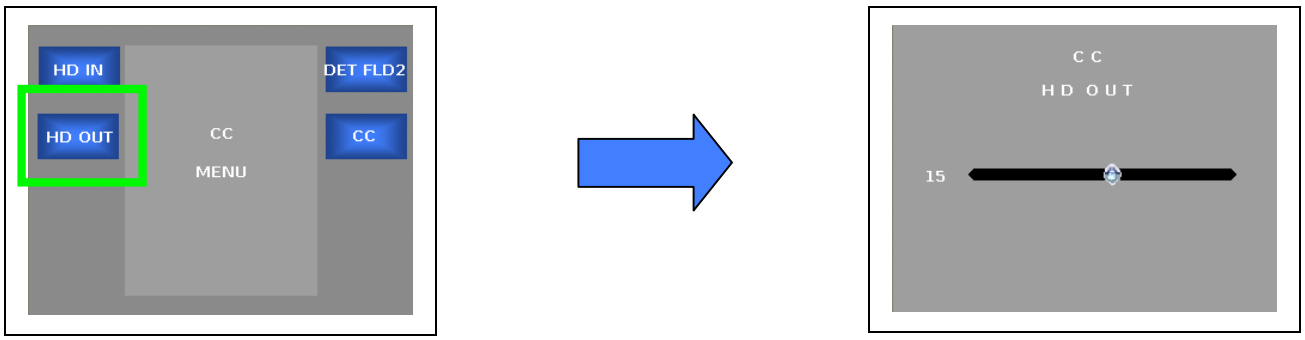
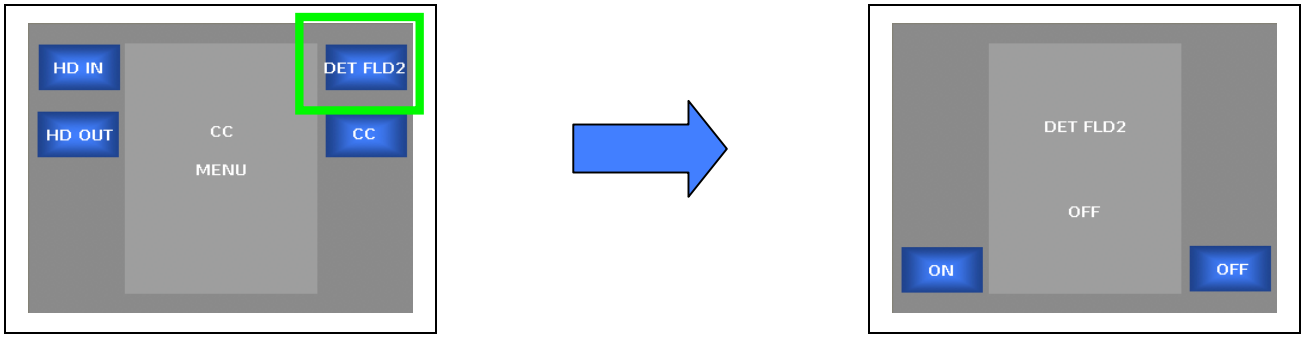
Closed Caption Menu (continued)



HD OUT - Used to select the location for inserting the closed caption information in the output HD signal. To adjust, turn the rotary encoder on the control panel. Press the DEFAULT soft button to go back to the default value.

- The range of adjustment is Line 9 to Line 19
- The default setting is Line 9

Press the BACK button to move to the previous menu.
Press the Home button to go back to the Main Menu.



DET FLD 2 – Enables the detection of field 2 closed caption information

- ON – Enables Field 2 Detection
- OFF – Disables Field 2 Detection

Press the BACK button to move to the previous menu.
Press the Home button to go back to the Main Menu.

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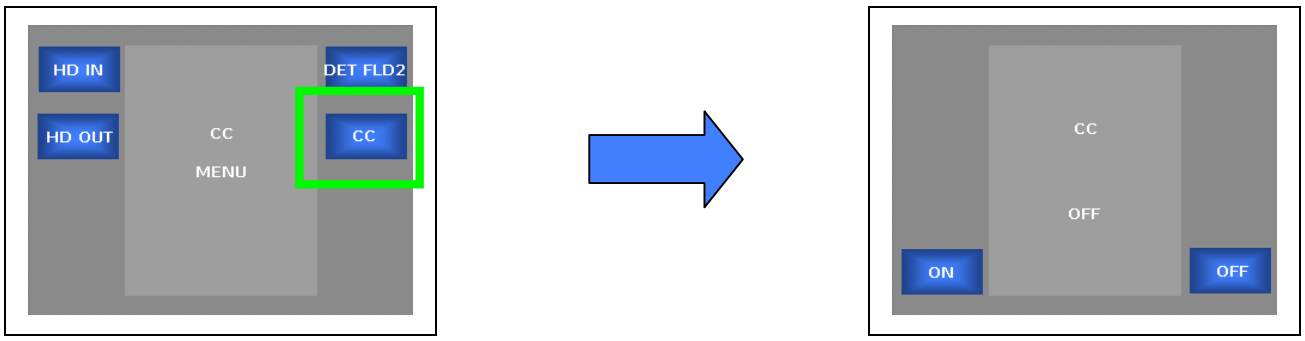
Closed Caption Menu (continued)



CC – Enables Closed Caption processing

- ON – Enables Closed Caption support
- OFF – Disables Closed Caption support

Press the BACK button to move to the previous menu.
Press the Home button to go back to the Main Menu.

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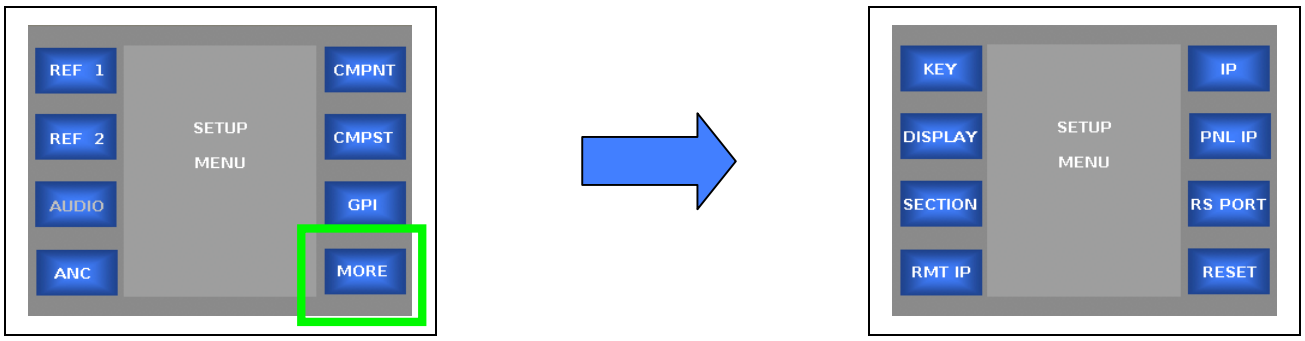
Setup Menu – Page 2



MORE – Takes the user to additional Setup menus

- KEY – Used to enter the System Access Key
- DISPLAY – Not functional / Future expansion
- SECTION – Not functional / Future expansion
- RMT IP – Set the IP of the VC100 chassis that the Remote Control Panel will communicate with
- IP – Allows the user to set the IP address for the chassis
- PNL IP – Allow the user to set the IP address for the Front Panel
- RS PORT – Not functional / Future expansion
- RESET – Not functional / Future expansion

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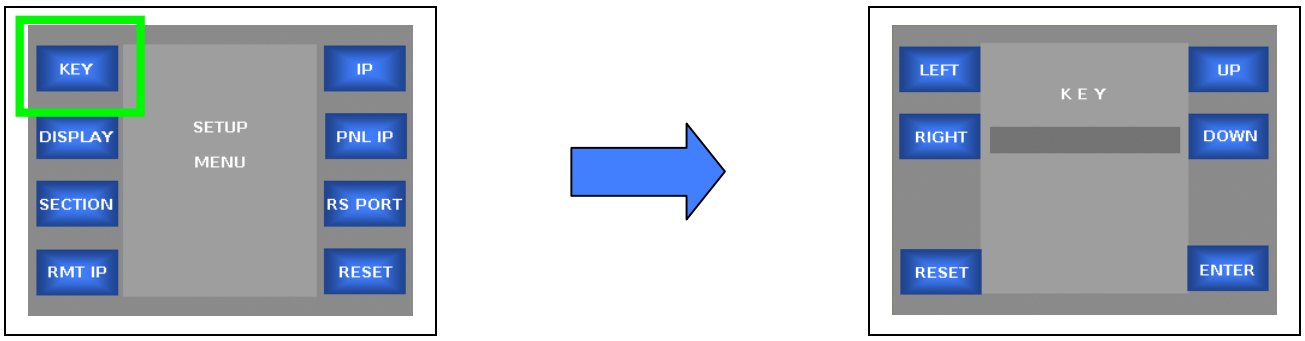
Key (License Key) Menu



KEY – Used to enter the "Access" or License Key to configure the VC100 for the purchased features and options.

- **LEFT** – Moves the cursor left, one position
- **RIGHT** - Moves the cursor right, one position
- **UP** – Scrolls up through the list 0-9, A-Z
- **DOWN** – Scrolls down through the list 0-9, A-Z
- **RESET** – Resets or Clears the currently entered Key
- **ENTER** – Press to accept the Access Key

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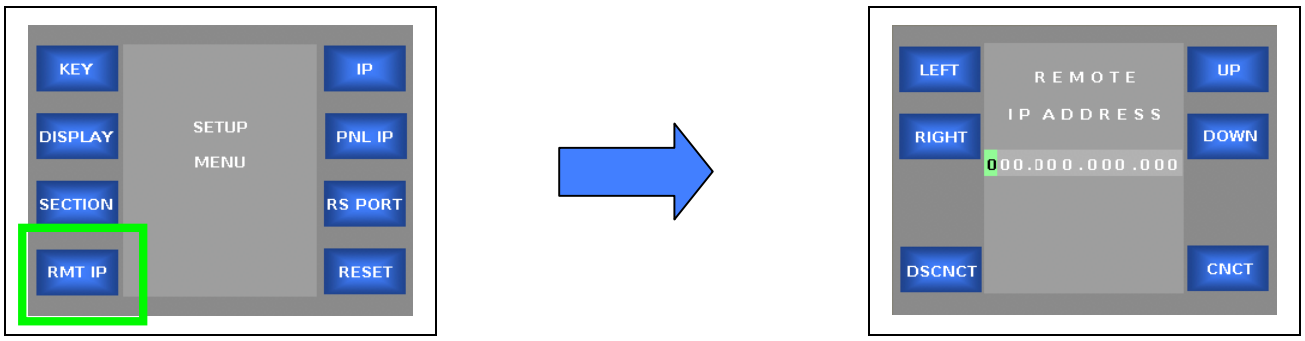
Remote IP Address Menu



RMT IP – Used to enter the IP address of the chassis that you wish to connect to with a remote control panel.

- **LEFT** – Moves the cursor left, one position
- **RIGHT** - Moves the cursor right, one position
- **UP** – Scrolls up through the list 0-9
- **DOWN** – Scrolls down through the list 0-9
- **DSCNCT** – Disconnects the Remote Control Panel from the VC100 chassis
- **CNCT** – Connects the Remote Control Panel to the Chassis selected by the Remote IP Address

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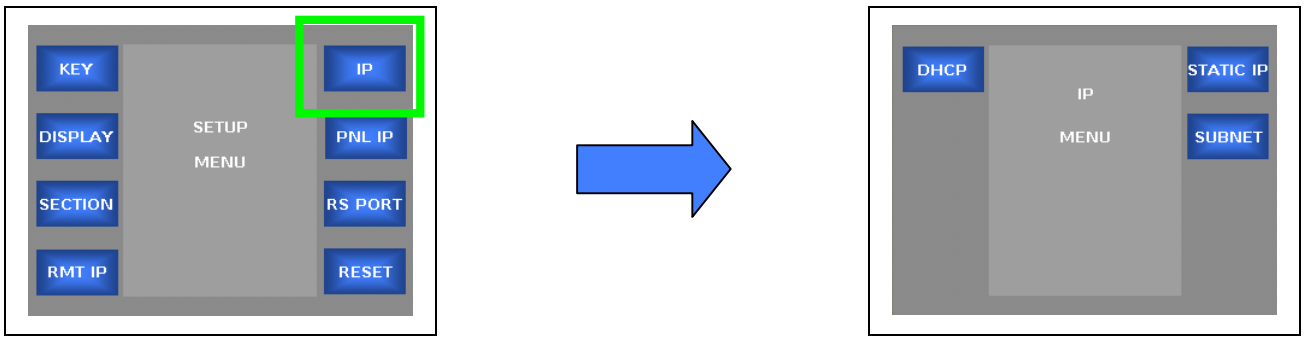
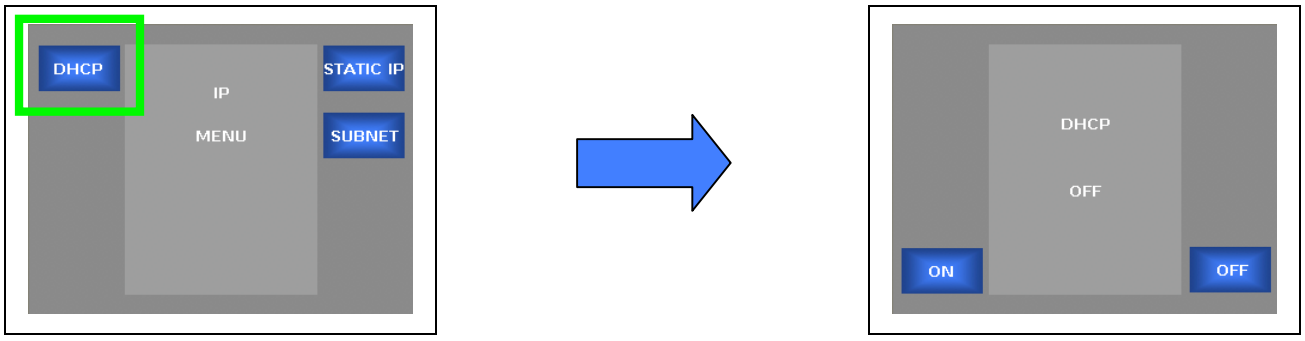
IP Address Menu



IP – Set the IP address for the VC100 chassis

- **DHCP** – Assign an IP address to the VC100 chassis using Dynamic Host Configuration Protocol (DHCP)
- **STATIC IP** – Allows the VC100 chassis IP address to be manually entered
- **SUBNET** – Not functional / Future expansion



DHCP - assign an IP address to the VC100 chassis using Dynamic Host Configuration Protocol (DHCP)

- **ON** – Enabled DHCP IP address assignment
- **OFF** – Disabled DHCP

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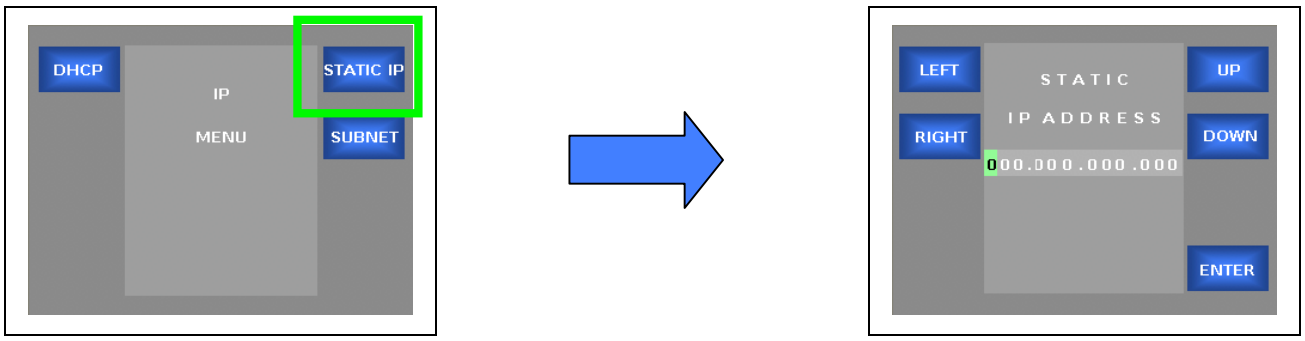
IP Address Menu (continued)



STATIC IP – Allows the IP address of the VC100 chassis to be manually entered

- **LEFT** – Moves the cursor left, one position
- **RIGHT** - Moves the cursor right, one position
- **UP** – Scrolls up through the list 0-9
- **DOWN** – Scrolls down through the list 0-9
- **ENTER** – Press to accept the Access Key

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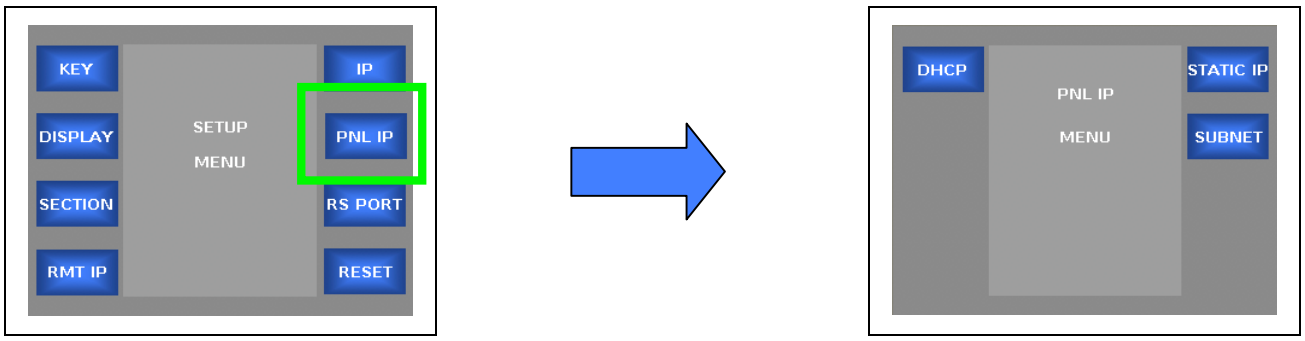
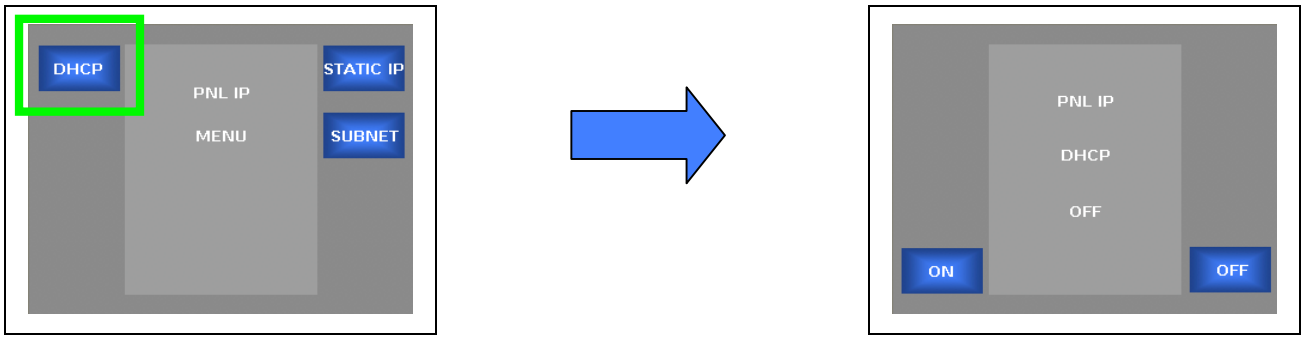
Control Panel IP Address Menu



PNL IP – Set the IP address for the VC100 Local Control Panel

- **DHCP** – Assign an IP address to the VC100 Local Control Panel using Dynamic Host Configuration Protocol (DHCP)
- **STATIC IP** – Allows the VC100 Local Control Panel IP address to be manually entered
- SUBNET – Not functional / Future expansion



DHCP - assign an IP address to the VC100 Local Control Panel using Dynamic Host Configuration Protocol (DHCP).

- **ON** – Enabled DHCP IP address assignment
- **OFF** – Disabled DHCP

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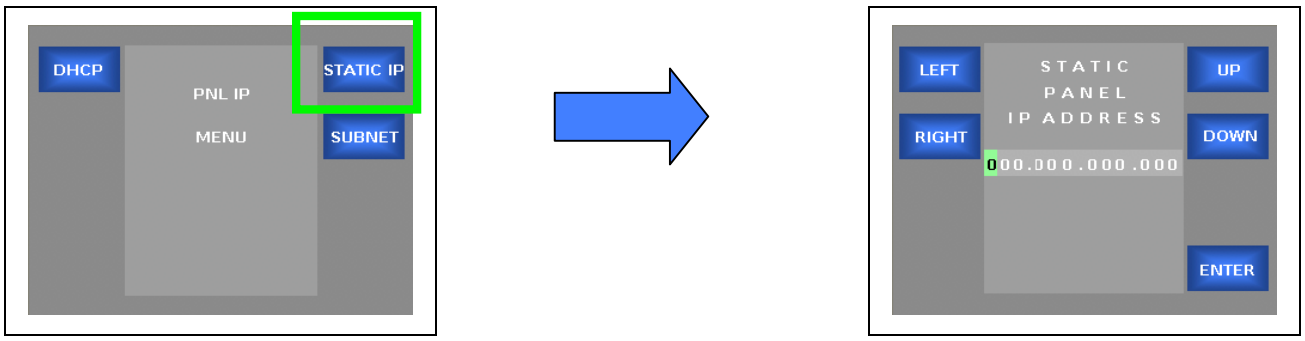
Control Panel IP Address Menu (continued)



STATIC IP – Allows the IP address of the VC100 Local Control Panel to be manually entered

- **LEFT** – Moves the cursor left, one position
- **RIGHT** - Moves the cursor right, one position
- **UP** – Scrolls up through the list 0-9
- **DOWN** – Scrolls down through the list 0-9
- **ENTER** – Press to accept the Access Key

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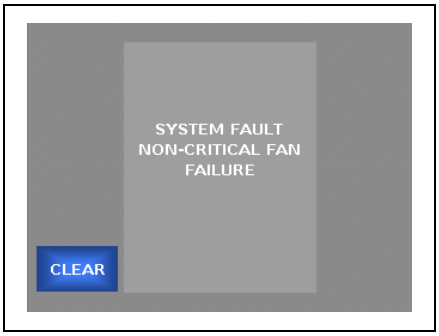
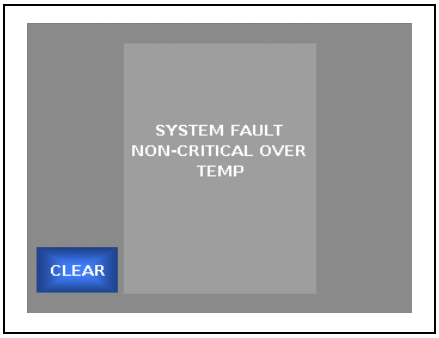
System Messages

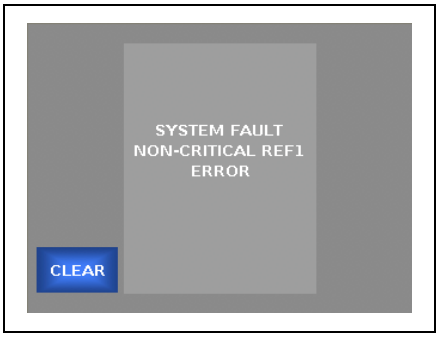
System Messages – Non-critical Alerts



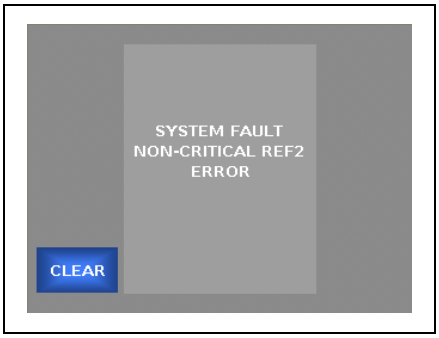
A non-critical system fault indicating that there is a problem with one or more of the internal fans.



A non-critical system fault indicating that there is a temperature problem in the chassis.



A non-critical system fault indicating that there is a problem with External Reference 1.



A non-critical system fault indicating that there is a problem with External Reference 2.

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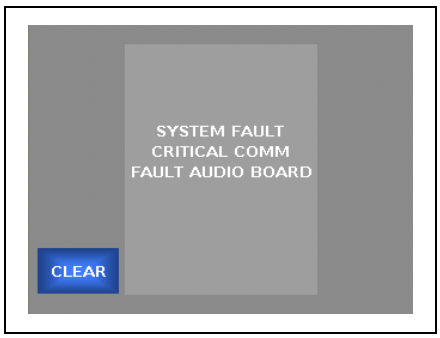
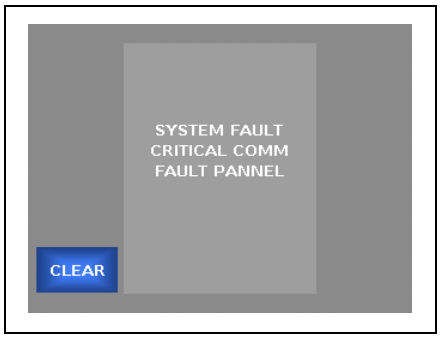
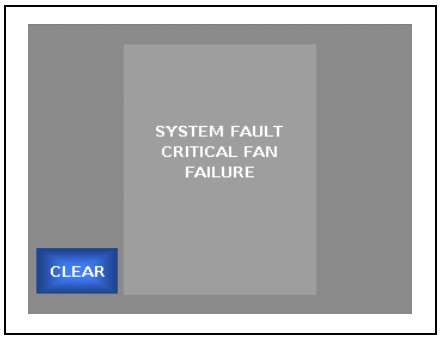
System Message – Critical Alerts



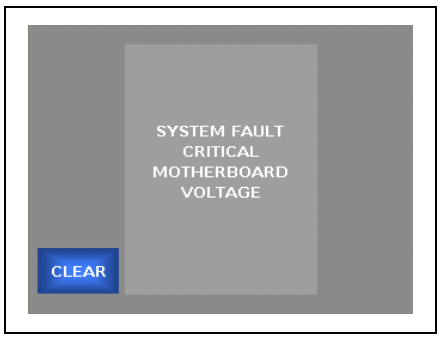
A critical system fault indicating that there is a problem with the communication between the Audio option board and the main chassis.



A critical system fault indicating that there is a problem with the communication between the Local Control Panel and the main chassis.



A critical system fault indicating that there is a problem with the internal fans.



A critical system fault indicating that there is a problem with the one or more of the power supply voltages on the chassis motherboard.

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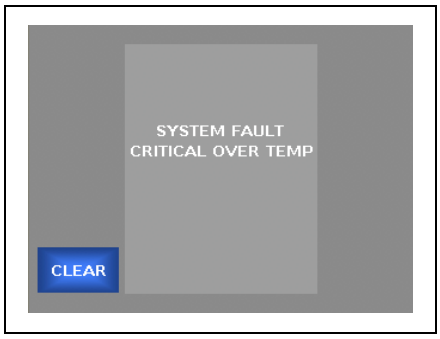
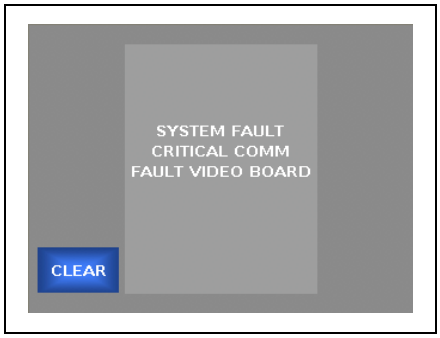


A critical system fault indicating that there is a problem with the internal temperature of the chassis.



A critical system fault indicating that there is a problem with the communication between the Video option board and the main chassis.

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Appendix A – Audio Cables

Cable & Pin-outs

Analog Audio IO Break Out Cable
Connector: Molex LFH

LFH Pos	Signal Description	XLR (Female)	LFH Pos	Signal Description	XLR (Male)
1	Channel 8 RX+ Signal	2	31	Channel 8 TX+ Signal	2
2	Channel 8 RX Ground	1	32	Channel 8 TX Ground	1
3	Channel 8 RX- Signal	3	33	Channel 8 TX- Signal	3
4	NC		34	NC	
5	Channel 7 RX+ Signal	2	35	Channel 7 TX+ Signal	2
6	Channel 7 RX Ground	1	36	Channel 7 TX Ground	1
7	Channel 7 RX- Signal	3	37	Channel 7 TX- Signal	3
8	NC		38	NC	
9	Channel 6 RX+ Signal	2	39	Channel 6 TX+ Signal	2
10	Channel 6 RX Ground	1	40	Channel 6 TX Ground	1
11	Channel 6 RX- Signal	3	41	Channel 6 TX- Signal	3
12	NC		42	NC	
13	Channel 5 RX+ Signal	2	43	Channel 5 TX+ Signal	2
14	Channel 5 RX Ground	1	44	Channel 5 TX Ground	1
15	Channel 5 RX- Signal	3	45	Channel 5 TX- Signal	3
16	Channel 4 RX+ Signal	2	46	Channel 4 TX+ Signal	2
17	Channel 4 RX Ground	1	47	Channel 4 TX Ground	1
18	Channel 4 RX- Signal	3	48	Channel 4 TX- Signal	3
19	NC		49	NC	
20	Channel 3 RX+ Signal	2	50	Channel 3 TX+ Signal	2
21	Channel 3 RX Ground	1	51	Channel 3 TX Ground	1
22	Channel 3 RX- Signal	3	52	Channel 3 TX- Signal	3
23	NC		53	NC	
24	Channel 2 RX+ Signal	2	54	Channel 2 TX+ Signal	2
25	Channel 2 RX Ground	1	55	Channel 2 TX Ground	1
26	Channel 2 RX- Signal	3	56	Channel 2 TX- Signal	3
27	NC		57	NC	
28	Channel 1 RX+ Signal	2	58	Channel 1 TX+ Signal	2
29	Channel 1 RX Ground	1	59	Channel 1 TX Ground	1
30	Channel 1 RX- Signal	3	60	Channel 1 TX- Signal	3

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AES Audio IO Break Out Cable (Balanced)
Connector: Molex LFH

LFH Pos	Signal Description	XLR (Female)	LFH Pos	Signal Description	XLR (Male)
1	Channel 8 RX+ Signal	2	31	Channel 8 TX+ Signal	2
2	Channel 8 RX Ground	1	32	Channel 8 TX Ground	1
3	Channel 8 RX- Signal	3	33	Channel 8 TX- Signal	3
4	NC		34	NC	
5	Channel 7 RX+ Signal	2	35	Channel 7 TX+ Signal	2
6	Channel 7 RX Ground	1	36	Channel 7 TX Ground	1
7	Channel 7 RX- Signal	3	37	Channel 7 TX- Signal	3
8	NC		38	NC	
9	Channel 6 RX+ Signal	2	39	Channel 6 TX+ Signal	2
10	Channel 6 RX Ground	1	40	Channel 6 TX Ground	1
11	Channel 6 RX- Signal	3	41	Channel 6 TX- Signal	3
12	NC		42	NC	
13	Channel 5 RX+ Signal	2	43	Channel 5 TX+ Signal	2
14	Channel 5 RX Ground	1	44	Channel 5 TX Ground	1
15	Channel 5 RX- Signal	3	45	Channel 5 TX- Signal	3
16	Channel 4 RX+ Signal	2	46	Channel 4 TX+ Signal	2
17	Channel 4 RX Ground	1	47	Channel 4 TX Ground	1
18	Channel 4 RX- Signal	3	48	Channel 4 TX- Signal	3
19	NC		49	NC	
20	Channel 3 RX+ Signal	2	50	Channel 3 TX+ Signal	2
21	Channel 3 RX Ground	1	51	Channel 3 TX Ground	1
22	Channel 3 RX- Signal	3	52	Channel 3 TX- Signal	3
23	NC		53	NC	
24	Channel 2 RX+ Signal	2	54	Channel 2 TX+ Signal	2
25	Channel 2 RX Ground	1	55	Channel 2 TX Ground	1
26	Channel 2 RX- Signal	3	56	Channel 2 TX- Signal	3
27	NC		57	NC	
28	Channel 1 RX+ Signal	2	58	Channel 1 TX+ Signal	2
29	Channel 1 RX Ground	1	59	Channel 1 TX Ground	1
30	Channel 1 RX- Signal	3	60	Channel 1 TX- Signal	3

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AES Audio IO Cable (Unbalanced)
Connector: Molex LFH Mtx 50

LFH Pos	Signal Description	BNC Connector	LFH Pos	Signal Description	BNC Connector
1	Channel 8 RX+ Signal	1 (Pin)	31	Channel 8 TX+ Signal	1 (Pin)
2	NC		32	NC	
3	Channel 8 RX- Signal	2 (Shield)	33	Channel 8 TX- Signal	2 (Shield)
4	NC		34	NC	
5	Channel 7 RX+ Signal	1 (Pin)	35	Channel 7 TX+ Signal	1 (Pin)
6	NC		36	NC	
	Channel 7 RX- Signal	2 (Shield)	37	Channel 7 TX- Signal	2 (Shield)
8	NC		38	NC	
9	Channel 6 RX+ Signal	1 (Pin)	39	Channel 6 TX+ Signal	1 (Pin)
10	NC		40	NC	
11	Channel 6 RX- Signal	2 (Shield)	41	Channel 6 TX- Signal	2 (Shield)
12	NC		42	NC	
13	Channel 5 RX+ Signal	1 (Pin)	43	Channel 5 TX+ Signal	1 (Pin)
14	NC		44	NC	
15	Channel 5 RX- Signal	2 (Shield)	45	Channel 5 TX- Signal	2 (Shield)
16	Channel 4 RX+ Signal	1 (Pin)	46	Channel 4 TX+ Signal	1 (Pin)
17	NC		47	NC	
18	Channel 4 RX- Signal	2 (Shield)	48	Channel 4 TX- Signal	2 (Shield)
19	NC		49	NC	
20	Channel 3 RX+ Signal	1 (Pin)	50	Channel 3 TX+ Signal	1 (Pin)
21	NC		51	NC	
22	Channel 3 RX- Signal	2 (Shield)	52	Channel 3 TX- Signal	2 (Shield)
23	NC		53	NC	
24	Channel 2 RX+ Signal	1 (Pin)	54	Channel 2 TX+ Signal	1 (Pin)
25	NC		55	NC	
26	Channel 2 RX- Signal	2 (Shield)	56	Channel 2 TX- Signal	2 (Shield)
27	NC		57	NC	
28	Channel 1 RX+ Signal	1 (Pin)	58	Channel 1 TX+ Signal	1 (Pin)
29	NC		59	NC	
30	Channel 1 RX- Signal	2 (Shield)	60	Channel 1 TX- Signal	2 (Shield)

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Appendix B – Preset Files

The following table details the parameters that are captured in the user presets.

Function	Command	Comments
Aperture Slider	APERTURE	for frame-rate conversions
Aspect Ratio	ASPECT	select fixed aspect ratios
B-Y Level	B-Y	
Black Level	BLACKLEVEL	
Closed Caption Detect Field 2 Information	CLOSED CAP DETECT FIELD 2	
Closed Caption Detection Line	CLOSED CAP DETECT LINE	
Closed Caption on/off	CLOSED CAP ON/OFF	
Closed Caption Output Line Number	CLOSED CAP OUTPUT LINE	for HD outputs
Detail Enhance	DETAILENHANCE	
Edge Trim – Horizontal	EDGETRIM X	
Edge Trim – Vertical	EDGETRIM Y	
IN1 / IN2 / REF1 / REF2	EXT REFERENCE	select external reference source
INPUT / BLACKBURST / TRI-I / TRI-P	EXT REF TYPE	select external reference type
Hue Phase	HUE	
Input / Output Format	IOFRMAR	
Input / Output (Video) Source	IOSOURCE	
Proc Amp Bypass	PROCAMP BYPASS	
R-Y Level	R-Y	
Noise Reduction Red Overlay	RED OVERLAY	
Saturation	SATURATION	
Auto / Film / Video	SOURCETYPE	
Noise Reduction Split Screen	SPLITSCREEN	
Video Test Signals	TESTSCREEN	enables video test signals
Timecode Output Line Select	TIME CODE OUTPUT LINE	for SD outputs
Noise Reduction On/Off	TRNR	
Noise Reduction Bias Level	TRNRBIAS	
Video Gain	VIDEOGAIN	
Zoom / Crop	ZOOMCROP	

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Specifications

Video Input:
SD- & HD-SDI Input (2):
- SD/HD-SDI, 10-bit serial digital input at 270Mb/s per SMPTE-259-C or 20-bit serial digital input at 1.485Gb/s per SMPTE 292-1997, SD audio embedding per SMPTE 272M or HD audio embedding per SMPTE-299
- Formats SD: 480i59.94, 576i50
- Formats HD: SMPTE-274M: 1080i59.94, 1080i50
- Formats HD: SMPTE-296M: 720p59.94, 720p50
- Cable Length SD: 300m (1000ft.) Belden 1694A at 270Mb/s and HD: 110m (350ft.) Belden 1694A at 1.485Gb/s

SD- & HD-SDI Output (4):
- SD/HD-SDI, 10-bit serial digital output at 270Mb/s per SMPTE-259-C or 20-bit serial digital output at 1.485Gb/s per SMPTE 292-1997, SD audio embedding per SMPTE 272M or HD audio embedding per SMPTE-299
- Formats SD: 480i59.94, 576i50
- Formats HD: SMPTE-274M: 1080i59.94, 1080i50
- Formats HD: SMPTE-296M: 720p59.94, 720p50
- Return Loss: >15dB up to 1.5GHz per SMPTE-292M
- Jitter: <0.2UI as per SMPTE-292M

Reference Input (2)
- SD Blackburst – SMPTE-170M or HD Tri-level Sync – SMPTE 274M / SMPTE296M

Audio Input/Output:
Embedded audio
- 16-channels of embedded audio
- Sampling: 48KHz
- Quantization: SD: 20-bits, HD: 24-bits

Note: At present there are 8 audio channels assigned to each video processing channel in a dual-channel VC100. A single channel VC100 has 16-channels of audio.

Ancillary Data Input/Output:
Closed Caption
- ITU-608 pass-through for 480i59.94 IO processing
- ITU-608 to ITU-708 translation for 480i59.94 up-conversions to 720p59.94 and 1080i59.94
- ITU-708 pass-through for 720p59.94 to 1080i59.94 and 1080i59.94 to 720p59.94
- Line 21 extraction for 60Hz down-conversions, 720p59.94 and 1080i59.94 to 480i59.94

Vertical Interval Time Code (VITC)
- Supports vertical interval timecode (VITC) delay to automatically match the video processing delay

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Processing Features:
Video Proc Amp
- Video gain – adjustable +/- 6dB, default = 0
- Black Level – adjustable +/- 30mV, default = 0
- Hue – adjustable -179 to +178, default = 0
- Saturation – adjustable +/- 6dB, default = 0
- R-Y – adjustable +/- 200mv, default = 0
- B-Y – adjustable +/- 200mV, default = 0

Enhance
- Detail Enhance - adjustable 0 to 100, default = 25
- Sharpness - adjustable 0 to 100, default = 0

Colorspace conversions
- Operates automatically based on the selected conversion
- There are no user controls for this function

Temporal Recursive Noise Reduction Filter
- Bias - adjustable +/- 6dB, default = 0
- Split screen - On/Off
- Red Overlay - On/Off

Auto, Film, Video
- Allows selection of auto, film, or video processing modes. Default = Auto

Aspect Ratio Conversion
- Fixed Aspect Ratio Conversions
    - Common Top & Bottom
    - Common Sides
    - Anamorphic
    - Flexview
    - 14:9
- H & V Trim - 0 to 200 pixels SD, 0 to 200 lines SD, 0 to 400 pixels HD, 0 to 400 lines HD
- Zoom/Crop – On/Off (Zoom by 3, Crop by 3)

Frame Sync with Audio Sample-rate Converters

Test Pattern (Video) Generator
- Screen boundary with circle
- 75% Color Bars
- Gray Bars
- Resolution alignment
- RGB Bars
- Grid

Note: The available test patterns may change in the final release of software

Audio Processing
- Supports audio level adjustment per audio channel
    - -32dB to +16dB for embedded audio
- Supports audio phase adjustment per audio channel
    - +/- 180 degrees invert

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Delay
- The video processing delay for all application is 4 frames.
- The VC100 has the ability to adjust the audio delay from -100mS to +5 seconds.

Other:
10/100-BaseT Ethernet (for remote control)
- User assignable IP address
- Supports DHCP

User Presets
- The VC100 supports 6 User Presets.
- Preset 1 to Preset 4 will store ALL parameters
- Preset 5 is fixed to Remote. It will place the system in remote when triggered
- Preset 6 is fixed to Tally. It will place the system in the On Air mode when triggered

Redundant Power Supply
- The VC100 contains a redundant power supply.
- The redundant supply has two separate universal AC inputs (90-240 VAC 50/60Hz)

Note: The power supplies are not hot swappable. Two separate mains inputs are provided for facilities that support independent power grids for redundancy.

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